LIGHTWAVES

The Official Newsletter of the ALD

September 2026

VENUE & LAS VEGAS

A MESSAGE FROM THE CONFERENCE & SCIENTIFIC CHAIRS

Dr. Shigeyuki Nagai

Prof. Dr. George Romanos

WHY YOU SHOULD ATTEND ALD 2026

Todd Goldman

SPEAKERS & POSTER COMPETITION

HYGIENE CORNER

Lynn Atkinson



ALD

Academy of Laser Dentistry

Lightwaves: The Official Newsletter of the ALD

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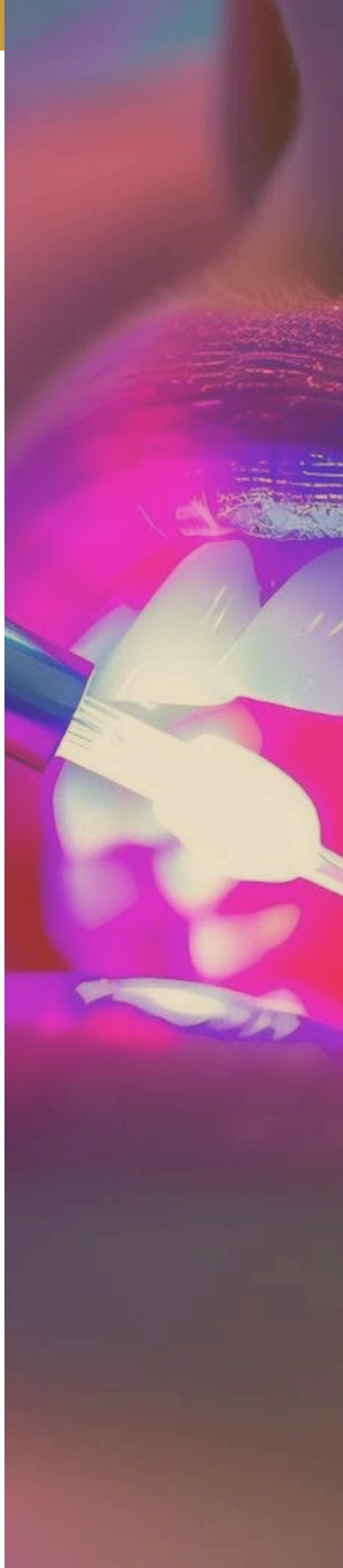
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EDITOR'S LETTER



Welcome to this special edition of *Lightwave*, dedicated to the 33rd Academy of Laser Dentistry Annual Conference, taking place October 15–17, 2026, in Las Vegas under the inspiring theme, "The Power of Lights."

This issue is designed to be much more than a newsletter—it is your preview and companion to the 2026 ALD Conference. We have brought together the people, science, education, and activities that will make this year's meeting a truly international celebration of light based dentistry and healthcare.

We begin with messages from ALD President Dr. Grace Sun, Conference Chair Dr. Shigeyuki Nagai, and Scientific Chair Prof. George Romanos, offering their perspectives on the Academy, the meeting, and the exciting opportunities ahead. Todd Goldman, ALD Executive Director, provides an overview of the conference experience, while Lynn Atkinson brings us a dedicated Hygiene Corner, highlighting the important role of dental hygienists in the evolving world of laser and light-based technologies.

At the heart of this issue is the scientific program. You will find the conference schedule, educational sessions, workshops, exhibition information, and the complete collection of ALD presenter abstracts, accompanied by photographs and brief biographies of the presenters. Whether your interests are clinical applications, research, technology, or emerging areas of light-based therapy, we hope these pages help you plan your conference experience and discover sessions you won't want to miss.

We also invite you to explore our exhibitor section, featuring the companies and technologies supporting this year's meeting. Their participation is an important part of the ALD educational environment and provides attendees with an opportunity to discover the latest developments in our field.

Finally, we hope this issue captures something beyond the program itself—the spirit of ALD: learning from one another, exchanging ideas, building friendships, and advancing our profession together.

I look forward to seeing many of you in Las Vegas. Until then, enjoy this special issue of *Lightwave*, and let it be your guide to experiencing "**The Power of Lights**."

Ali Obeidi, DDS, MSc, MS, FALD
Editor, *Lightwave*

PRESIDENT'S REMARKS



Dear ALD Members, Colleagues, and Friends,

It is both a privilege and a heartfelt honor to welcome you to this special Annual Conference edition of Lightwave. As we prepare to gather in Las Vegas, I find myself reflecting with gratitude on the journey we have shared and with great optimism about the future of the Academy of Laser Dentistry.

Our strength as an Academy has never been defined solely by technology or science. It is defined by our people—clinicians who share their experience, educators who inspire the next generation, researchers who advance our knowledge, volunteers who give their time, and members who continue to support one another. This spirit of collaboration is what makes ALD a truly special professional community.

Over the past year, we have continued to strengthen our educational programs, expand our international presence, develop new study clubs, advance the Standard Level Course curriculum, and welcome new members into our growing global community. I am deeply grateful to our Board of Directors, committee members, faculty, volunteers, staff, industry partners, and every member whose dedication has made these accomplishments possible.

My vision throughout my presidency has been to help position ALD as a leading global organization for laser dentistry education while embracing the rapidly evolving science of photobiomodulation. Our partnership with WALT and NAALT reflects this commitment to international collaboration and to expanding our understanding of the broader potential of light-based therapies.

As my presidential term comes to a close, serving this Academy has been one of the greatest honors of my professional career. I am especially grateful for the friendships, mentorship, and trust that have enriched this experience. Although my term is ending, **my commitment to ALD and its mission will continue.**

I am confident that ALD's brightest days are ahead. By continuing to invest in education and research, embrace innovation, strengthen international collaboration, and mentor future leaders, we will continue to advance our profession and improve the lives of the patients we serve.

Thank you for your trust, friendship, and unwavering dedication to the Academy. I look forward to seeing you in Las Vegas and celebrating not only what we have accomplished together, but also the exciting future that lies ahead.

With my deepest appreciation,

Grace Sun, DDS, FAACD, MALD, MAGD, MICOI
President, Academy of Laser Dentistry

SAHARA HOTEL IN LAS VEGAS

Conference Venue & Things to Do in Las Vegas



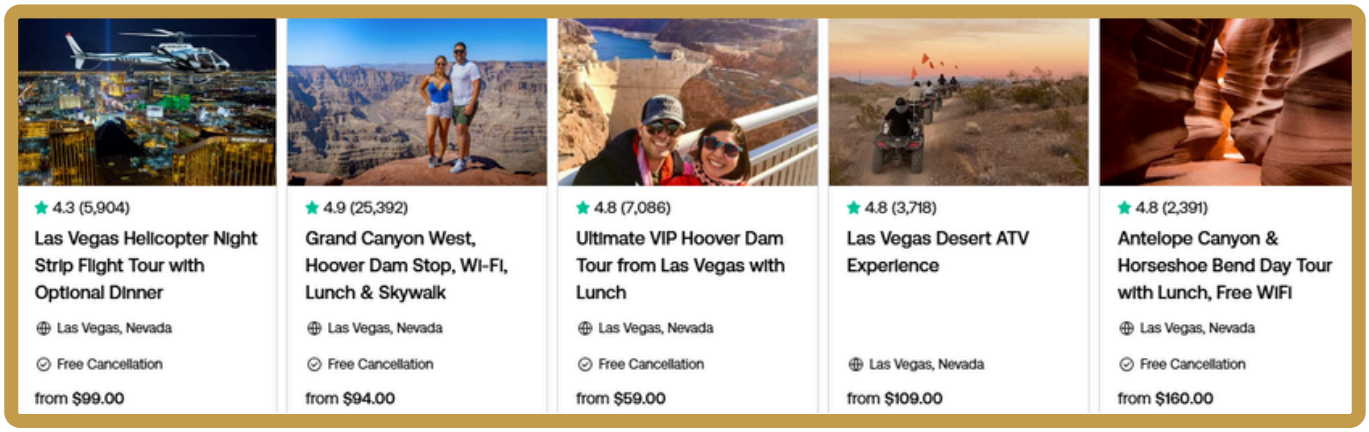
Set at the vibrant north end of the Strip, SAHARA Las Vegas blends iconic Vegas energy with modern sophistication, creating the perfect backdrop for an unforgettable meeting experience. Recently reimagined, the resort offers stylish accommodations, flexible and contemporary meeting spaces, and exceptional culinary options. Attendees will enjoy world-class entertainment, a stunning rooftop pool, gaming, and seamless service. Whether networking after sessions, exploring Las Vegas nightlife, or visiting nearby attractions like Hoover Dam or the Grand Canyon SAHARA delivers a dynamic setting to mix business and pleasure.



The ALD has secured for you the **VEGAS UNLOCKED program.**

What is Vegas Unlocked?

Vegas Unlocked offers exclusive discounts for conventions and meeting visitors, making your stay in Las Vegas both productive and unforgettable. Attendees and exhibitors can access incredible savings on **Dining, Entertainment, Attractions, Tours,** and much more!



Extend your ALD 2026 experience beyond the classroom with **Viator!** Discover hundreds of ways to explore Las Vegas and the surrounding area—from Strip sightseeing and night tours to Grand Canyon and Hoover Dam adventures, helicopter rides, desert excursions, and more. Whether you have a few hours or a full day, Viator makes it easy to find an experience that fits your schedule.

WELCOME MESSAGE

From the Conference & Scientific Chairs





It is our great pleasure to welcome you to the **33rd Annual Conference of the Academy of Laser Dentistry**, October 15–17, 2026, **Las Vegas**. This year's meeting marks an important milestone as ALD joins the **World Association for Photobiomodulation Therapy (WALT**) and the **North American Association for Photobiomodulation Therapy (NAALT)** for an international congress dedicated to the science and clinical applications of light-based therapies.

Under the inspiring theme **"THE POWER OF LIGHTS,"** this joint congress brings together clinicians, researchers, educators, and industry leaders from around the world to exchange knowledge, strengthen collaboration, and explore the expanding potential of laser and photobiomodulation therapy.

The scientific program offers an exceptional combination of **Continuing Education (CE), plenary lectures, hands-on workshops, and interactive learning** for clinicians at every level. Highlights include ALD's **SLC Laser Training and Certification Program**, WALT educational programs, photobiomodulation, diode laser training, and advanced clinical workshops. Sessions will address contemporary applications across periodontics, endodontics, implant dentistry, oral surgery, aesthetics, orthodontics, pediatric dentistry, pain management, and healing.

Research and innovation remain at the heart of the congress, with **more than 60 oral and poster presentations** showcasing new research, clinical studies, and emerging technologies. Students and residents will also have opportunities to present their work through the poster competition and **Dr. Seidner Student Scholarship Program.**

Equally important, the congress provides opportunities to connect with colleagues and internationally recognized experts through the **Welcome Reception, networking activities, Gala Dinner, and exhibition.**

We invite experienced clinicians, researchers, educators, students, and those new to laser dentistry to join us for **three days of science, education, innovation, and international collaboration.**

We look forward to welcoming you to Las Vegas and experiencing together **"The Power of Lights."**

Dr. Shigeyuki Nagai, DDS, PhD
President-Elect, Academy of Laser Dentistry
33rd Annual Conference Chair

Prof. Dr. med. dent. George Romanos, DDS, PhD
33rd Annual Conference Scientific Chair

WHY YOU SHOULD ATTEND

Experience the 2026 ALD Annual Conference in Las Vegas



We are excited to welcome you to what promises to be one of the most memorable Academy of Laser Dentistry Annual Conferences in more than six years. From October 15–17, 2026, ALD will gather at the SAHARA Las Vegas for a truly unique international meeting alongside WALT and NAALT.

This year's program brings an exceptional range of educational opportunities. For the first time in several years, attendees can choose from laser courses featuring Erbium, CO_2, and Nd: YAG technologies, along with two Standard Laser Certification courses. WALT and NAALT will also introduce participants to the expanding field of photobiomodulation, including emerging applications in healing, pain management, and patient care.

Among the special highlights is an intensive 6-hour Mastering Frenectomies course with world-renowned clinician Dr. Larry Kotlow, featuring hands-on training and practical clinical instruction. With an outstanding international faculty and programs spanning dentistry and medicine, there will be something valuable for clinicians at every stage of their laser journey.

More Than a Conference

The SAHARA Las Vegas, our host venue, offers an ideal setting to combine education with relaxation and entertainment. Located on the Las Vegas Strip, the resort features comfortable accommodations, multiple restaurants and lounges, a resort pool, fitness facilities, the Amina Spa, entertainment, and convenient access to the Las Vegas Monorail.

The conference experience will extend beyond the lecture hall. The Welcome Reception and Gala Dinner will provide opportunities to reconnect with colleagues, meet new members of our international community, and celebrate together. The exhibition will also provide an opportunity to discover the latest products, technologies, and innovations from our industry partners.

For those traveling with family, friends, or colleagues, Las Vegas offers virtually unlimited opportunities to make the most of the trip. The Strip's restaurants, shows, attractions, and nightlife are only the beginning; visitors can also explore Fremont Street and Downtown Las Vegas, or experience the spectacular Sphere and many other attractions throughout the city.

Whether your goal is to advance your clinical skills, explore new technologies, earn CE, reconnect with colleagues, or simply experience an unforgettable few days in Las Vegas, the 2026 ALD Annual Conference offers an opportunity you won't want to miss.

We look forward to seeing you at the SAHARA October 15–17, 2026.

See you in Vegas!

Todd Goldman
Executive Director, Academy of Laser Dentistry

ALD® Academy of Laser Dentistry

THE POWER OF LIGHTS
In Las Vegas
SCHEDULE AT A GLANCE

ALD® 33rd YEAR 1993-2026

THURSDAY, OCTOBER 15, 2026 | PRE-CONFERENCE

THURSDAY WORKSHOPS

8:00am-5:00pm — ***Standard Level Laser Training & Certification Course***

12:30-6:30pm — ***Mastering Frenectomy & Soft Tissue Surgery: A Complete Clinical System from Diagnosis to Long-Term Outcomes*** — Lawrence Kotlow, DDS

5:00-7:00pm — **Reception w/ Exhibits & Badge Pick-Up**

FRIDAY, OCTOBER 16, 2026

8:00-8:40am — **Keynote Lecture:** ***Recent Advances in Photobiomodulation: From Precision Personalized Care to Policy Updates*** — Praveen Arany, PhD, DDS

8:40-9:20am — **Keynote Lecture:** ***Innovative Flapless Periodontal Surgery Using Er:YAG Laser: Er-LCPT*** — Akira Aoki, DDS, PhD

9:20-10:00am — **Keynote Lecture:** ***Mastering the Parameters of PBM*** — Jan Tunér, DDS

10:00-10:30am — **Break**

10:30-10:50am — ***Using Lasers to Help Diagnose and Manage Auto-Immune Diseases*** — Laura Braswell, DDS

10:55-11:15am — ***Innovative Approaches in Managing Oral Biofilm and Periopathogens Using Laser Therapy*** — Kinga Grzech-Leśniak, Prof., DMD, MSc, PhD

11:20-11:50am — ***Lasers for the GP and Beyond*** — Larry Lieberman, DDS

11:55am-12:15pm — ***Laser to Legacy: Converting Clinical Excellence into Long-Term Wealth*** — Nick Clausen, MBA

12:20-12:30pm — ***When Evidence Falls Short: Rethinking How We Interpret Research in Laser Dentistry*** — Ali Obeidi, DDS, MSc, MS, FALD

12:30-1:00pm — **Membership Meeting**

1:00-2:00pm — **Lunch**

FRIDAY WORKSHOPS

2:00-6:00pm — ***Standard Level Laser Training & Certification Course: Erbium: Chromium Laser Certification*** — Marina Polonsky, DDS

2:00-6:00pm — ***Photobiomodulation in Dentistry*** — Grace Sun, DDS & Arun Darbar, DDS, MS

2:00-6:00pm — ***Oral Biopsies and the Roles Lasers and Light Technologies Play*** — Alfred Wyatt, DMD

SATURDAY, OCTOBER 17, 2026

DENTIST TRACK

8:00-8:40am — **Keynote Lecture:** ***The Systematic Effects of Photobiomodulation Therapy: A Review of Evidence For and Against*** — Juanita Anders, PhD

8:40-9:20am — **Keynote Lecture:** ***Advances in Laser-Assisted Regenerative Periodontal and Peri-Implant Plastic Surgery*** — Homa H. Zadeh, DDS, PhD

9:20-10:00am — **Keynote Panel:** ***The Evolving Role of PBM in Orofacial, Head, & Neck Care: Expert Roundtable*** — Drs. J. Chris Castiel, Praveen Arany, Chukuka S. Enwemeka, & Violet Vakunseh Bumah

10:00-10:30am — **Break**

10:30-10:50am — ***Use of Erbium Lasers for Debonding*** — Janina Golob Deeb, DMD, MS

10:55-11:15am — ***Laser-Assisted Implantology*** — Saleh Anvaria Aria, DDS, MSc

11:20-11:40am — ***Thermal Imaging—Monitored At-Home PBM Therapy for Orofacial Inflammatory Processes*** — Haitham Elafifi, DDS

11:45am-12:10pm — ***Every Procedure is a Laser Procedure!*** — Robin Horton, BDS, FALD, FWCLI

12:15-12:35pm — ***Laser Dentistry as a Transformative Educational Tool: Opportunities and Barriers in Academic Integration*** — Natalia Elson, DDS

12:40-1:00pm — ***Utilizing PBM to Treat Cancer Symptoms and Cancer Treatment Side Effects*** — Mel A. Burchman, DDS, MALD

1:00-2:00pm — **Lunch**

2:00-2:35pm — ***Integrated Photonics-Enhanced Precision Dentists*** — Ambrose Chan, PhD, MSc, BDS, FRACDS, FICD

2:35-3:05pm — ***From Perforation to Preservation*** — Mohamed Yehya, DDS, PhD

3:05-3:35pm — ***Laser-Assisted Management of Severely Curved Canals to Prevent Ledge Formation*** — Md Arifur Rahman, BDS, MSc

3:35-4:00pm — **Break**

4:00-4:25pm — ***Bridging Chairside Laser Therapy and At-Home PBM*** — Alan Kwong Hing, DDS, MSc

4:25-4:45pm — ***Combination Laser Therapy—Effectively Using Multiple Wavelengths for Best Overall Treatment Results*** — Maki Tanaka, DDS, PhD

4:45-5:10pm — ***Laser-Induced Hypoxia of the Post-Extraction Socket to Preserve Bone Volume Without Grafting*** — Ernesto Vatteroni, DDS, PhD

DENTAL HYGIENIST TRACK

8:00-9:00am — ***Illuminating Precision: Understanding Laser Wavelengths in Dental Hygiene*** — Alfred Wyatt, DMD

9:00-10:00am — ***Deferring and Referring with Confidence*** — Erin Doffoney, RDH

10:00-10:30am — **Break**

10:30-11:30am — ***"Lighting the Way" Photobiomodulation for Healing, Pain, and Health in Hygiene*** — Lynn Atkinson, RDH

11:30am-1:00pm — ***TBD*** — Jodi Deming, RDH

1:00-2:00pm — **Lunch**

2:00-2:45pm — ***Are the Rules and Regulations for Lasers in Dental Hygiene Changing Again?*** — Angie Wallace, RDH

2:45-3:30pm — ***From Operatory to Educator: The RDH-to-Faculty Journey Through Laser Dentistry and Higher Education*** — Laurie Bricker, RDH, MS

3:30-4:00pm — **Break**

4:00-5:20pm — ***Periodontal Disease: The Oral Systemic Connection*** — Laura Braswell, DDS

SATURDAY WORKSHOPS

8:00am-5:00pm — ***Standard Level Laser Training & Certification Course***

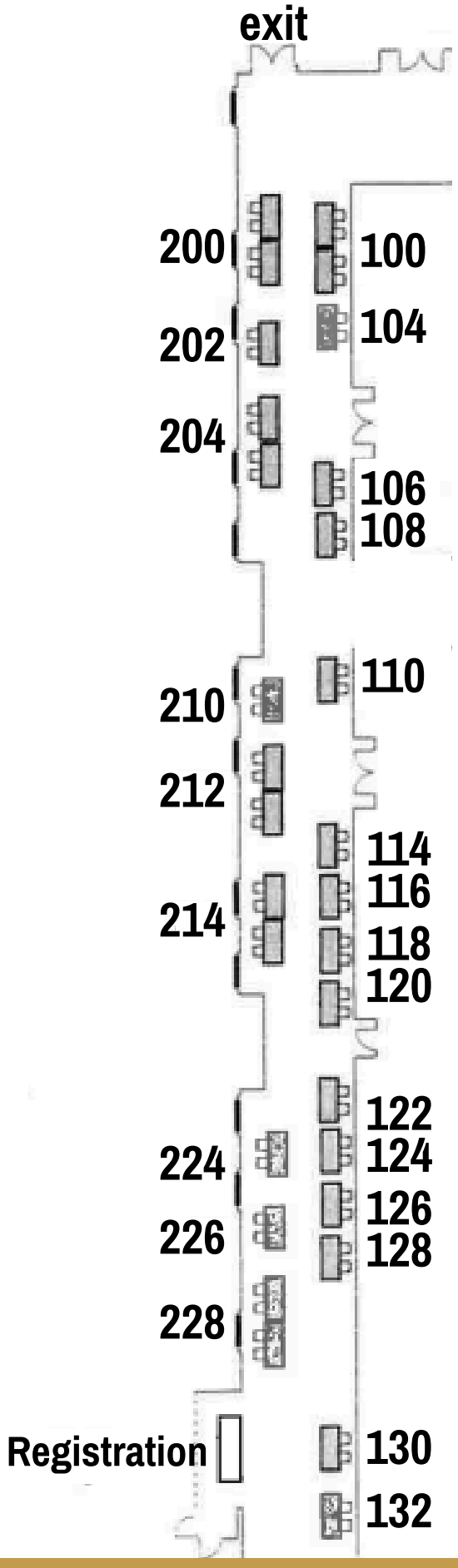
2:00-6:00pm — ***Diode Laser Workshop: From Fundamentals to Immediate Clinical Implementation*** — Ali Obeidi, DDS, MSc, MS, FALD

2:00-6:00pm — ***Elevating Patient Care with Laser Dentistry*** — Larry Lieberman, DDS

2:00-6:00pm — ***CO_2 Laser Certification*** — Georgios Romanos, Prof., Dr. med. dent., DDS, PhD

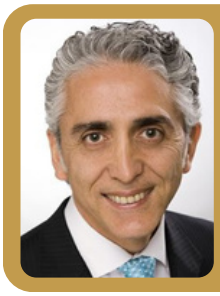
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EXHIBITION HALL MAP



COMPANY	#
Biolase	100
Mid-America Dental Sales Inc.	104
Lightmed Corporation	106
Shofu Dental Corporation	108
Deka Dental Lasers	110
DentLight, Inc.	114
Summus Medical Laser	116
Zianni Suits	118
Beyond International	120
Woodpecker	122
CareWear Corp	124
Vielight	200
The Doc Sites	202
Fotona	204
Light Instruments	210
Oral IQ	212
Medency	212A
Cutting Edge Laser Technologies	214
Myohealth Technologies	224
NOA Firm	226
Biosense	228

KEYNOTE SPEAKERS



HOMA H. ZADEH, DDS PhD

Dr. Zadeh earned his DDS from USC Ostrow School of Dentistry and completed advanced training in periodontology and immunology at the University of Connecticut. A tenured USC faculty member for 28 years and former Director of Postdoctoral Periodontology, he is internationally recognized for his clinical and scientific expertise, having lectured in over 40 countries and published more than 100 peer-reviewed articles, reviews, and book chapters. A past president and current trustee of the Western Society of Periodontology, Dr. Zadeh is the innovator of the internationally recognized VISTA technique and numerous patented clinical concepts and devices. He directs the VISTA Institute for Therapeutic Innovations and maintains a private periodontal and implant surgery practice in Southern California.

Advances in Laser-Assisted Regenerative Periodontal & Peri-Implant Plastic Surgery

Advances in laser technology have expanded the therapeutic options available for regenerative periodontal and peri-implant plastic surgical procedures. Lasers provide precise soft tissue ablation, improved hemostasis, reduced postoperative discomfort, and enhanced visualization of the surgical field, making them valuable adjuncts in procedures aimed at improving soft tissue phenotype and peri-implant tissue health. This presentation will review the application of laser technology in regenerative periodontal and peri-implant plastic surgery, with emphasis on soft tissue augmentation procedures. Clinical protocols for laser-assisted preparation of donor and recipient sites during connective tissue grafting and soft tissue phenotype modification will be discussed. The use of lasers to facilitate minimally invasive tissue management and optimize surgical outcomes will be highlighted. Non-ablative applications, including laser-assisted implant surface decontamination and photodynamic therapy for the management of periodontitis and peri-implantitis, will be reviewed. Clinical cases will illustrate the integration of laser technology into contemporary regenerative and plastic periodontal surgery, with discussion of the biologic rationale, surgical protocols, and practical considerations for optimizing treatment outcomes.

AKIRA AOKI, DDS, PhD



Dr. Aoki earned his DDS from Tokyo Medical and Dental University in 1989 and his PhD in 1996. He is Professor of Photoperiodontics at the Department of Periodontology, Institute of Science Tokyo, and has conducted Er:YAG laser research since 1991. Internationally recognized for his contributions to laser dentistry, he has received numerous honors, including the T. H. Maiman Award from the Academy of Laser Dentistry, the Scientific Award from the Japanese Society of Periodontology, and the 2024 Outstanding Educator Award from the IADR Lasers and Biophotonics Group. He also served as a Visiting Assistant Professor at UCSF and currently serves as Immediate-past President of the World Federation for Laser Dentistry.

Innovative Flapless Periodontal Surgery Using Er: YAG Laser: Er-LCPT

The use of lasers in periodontal therapy has gained increasing attention because of their beneficial therapeutic and biological effects in the management of inflammatory and infectious periodontal diseases. Among the various laser systems available, the Er:YAG laser is particularly attractive due to its ability to safely and effectively treat both soft and hard tissues with minimal thermal damage.

In periodontal surgery, the Er:YAG laser can precisely debride diseased root surfaces, remove subgingival calculus, ablate inflamed soft tissues within periodontal defects, and promote favorable wound healing and periodontal regeneration. Clinical studies have demonstrated that Er:YAG laser-assisted periodontal surgery provides outcomes comparable to, and in some cases superior to, those achieved with conventional surgical approaches. However, despite numerous studies investigating laser-assisted periodontal pocket treatment, consensus regarding its clinical benefits has not yet been fully established.

This presentation introduces a novel minimally invasive flapless surgical approach, Er:YAG laser-assisted comprehensive periodontal pocket therapy (Er-LCPT), which combines Er laser irradiation with conventional mechanical instrumentation. Er-LCPT enables safe, effective, and comprehensive debridement of periodontal pockets without flap elevation. Clinical evidence, including case series and randomized controlled trials, has demonstrated the safety and efficacy of this procedure for the treatment of residual periodontal pockets, with significantly greater improvements in clinical parameters compared with scaling and root planing alone. Furthermore, Er-LCPT may serve as a flapless regenerative approach during initial periodontal therapy, offering new possibilities for minimally invasive periodontal treatment.

JAN TUNÉR, DDS

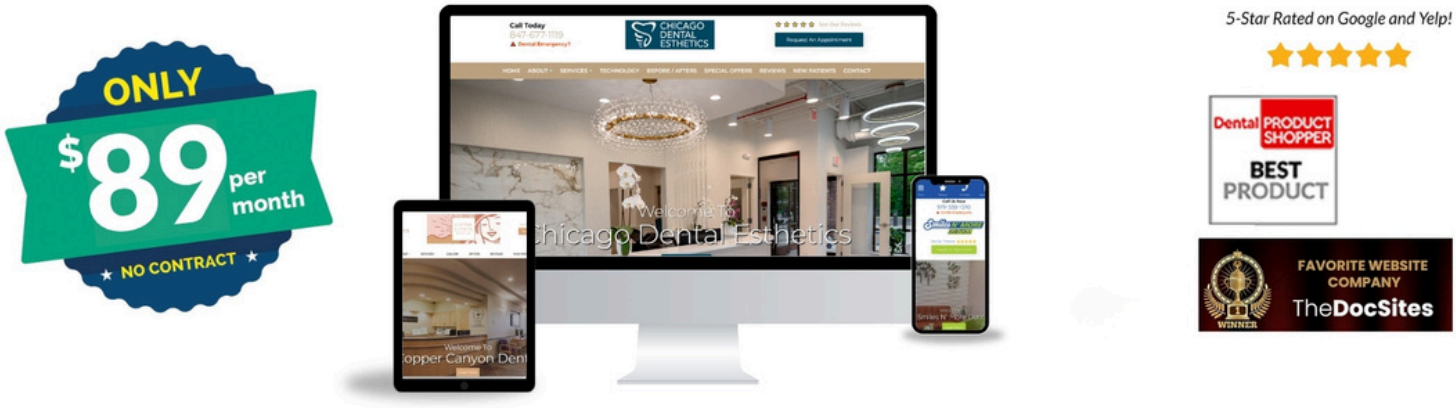


Jan Tunér has been working clinically and scientifically for 40 years with Laser PhotoBioModulation (PBM). He has lectured worldwide and is the author of seven books and several book chapters about medical lasers. Dr. Tunér was a board member of the World Association for Laser Therapy for ten years and has been a reviewer of many scientific journals and is a senior editor of Photomedicine and Laser Surgery. Among his published research papers, five were performed in cooperation with his Alma Mater, the Dental Faculty of the Karolinska Intitute in Stockholm, Sweden.

Mastering the Parameters of PBM

PBM is a complex method including a great variation of available parameters. Looking casually at the litterature, it may seem that anything goes, but actually success always lies in strict observation of the parameters. In order to reach a professional consensus, studies need to be reproducable, but with inadequate or incorrect accounts of the used parameters, consensus is hard to reach. As a reviewer, it is often disappointing to see all the enthusiasm and time wasted by not being in control of the parameters before the very onset of a study. Our associations and journals need to offer potential researchers straighforward requirements in order to avoid such waste of efforts. The goal of this presention is to suggest the minimum requirements for a sound scientific article in order not to land in an endless revewing process or even rejection.

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- ✓ Google My Business Posts
- ✓ Google Ads Management

GENERAL SESSION SPEAKERS



ROBIN HORTON, BDS, FALD, FWCLI

Robin is the owner of Wayside Dental Practice in Harpenden and has placed thousands of dental implants over 20 years, integrating advanced digital technologies into his practice. A Fellow of the ALD and WCLI, he lectures internationally on dental lasers, guided implant placement, and digital implant dentistry, and regularly leads Nobel's Digital Day in Zurich. He was the first UK dentist recognized as a Centre of Excellence for X-Guide Navigated Surgery and is also a Centre of Excellence for All-on-4. Robin qualified from the Royal London Hospital in 1990 and completed extensive oral surgery and implant training, with a focus on minimally invasive, precise, and patient-friendly treatment.

Every Procedure is a Laser Procedure!

This talk is to show that lasers are not just for geeks doing specialised treatments. They are for everyday dentistry. The properties of dental lasers are such that they fit really well with almost everything we do. Lasers are your best friend in the operatory. We are a seven operatory Practice, and we have four erbium, dual tissue lasers and five diode, soft tissue lasers, because I want all my clinicians to be able to use a laser every day in their dentistry. During the presentation I will give an overview and insight into laser and digital dentistry, how laser fits really well with the digital dentistry of today. I will show what the digital workflow is and how it streamlines procedures and simplifies solutions. I will show what is out there in terms of digital devices and what they bring to the table. We will run the whole range of dental procedures finishing with the current pinnacle in implant dentistry of how it is now possible to scan, plan, extract, place, get accurate records, print and fit teeth, all in a few hours and what role laser has in this which makes the procedure so much more predictable. But aside from this highly technical procedure Lasers are amazing in fillings, perio, soft tissue surgery, extractions, bone removal, sectioning roots, removing infection, raising flaps, uncovering implants, endodontics, healing, reducing inflammation, I could go on!

KINGA GRZECH-LEŚNIAK, Prof., DMD, MSc, PhD

Prof. Kinga Grzech-Leśniak is a periodontist, laser dentistry specialist, and Full Professor at Wroclaw Medical University, where she heads the Department of Integrated Dentistry. She is also an Affiliated Full Professor at Virginia Commonwealth University. A passionate clinician-scientist, she specializes in laser-assisted dentistry, photobiomodulation, and minimally invasive treatment protocols, with a strong focus on translational research and innovation. Prof. Grzech-Leśniak holds leadership roles with WALT, ALD, WFLD, IADR-LBG, and serves as President of the Polish Society of Laser Dentistry.



Innovative Approaches in Managing Oral Biofilm & Periopathogens Using Laser Therapy

The management of oral biofilm and periopathogens is a critical aspect of periodontal therapy, influencing treatment outcomes and long-term oral health. Traditional mechanical debridement, while effective, has limitations in eradicating pathogenic bacteria, particularly in deep periodontal pockets and complex biofilm structures. Laser therapy presents an innovative approach by offering bactericidal effects, biofilm disruption, and biostimulatory benefits that promote tissue healing. This presentation explores the role of various laser systems, including Nd:YAG, Er:YAG, and diode lasers, in modulating the oral microbiome and enhancing periodontal regeneration. Clinical applications, treatment protocols, and the latest evidence-based findings on laser-assisted periodontal therapy will be discussed, emphasizing its advantages over conventional methods.



LAURA BRASWELL, DDS

Laura Braswell is a Periodontist in Atlanta, GA who is passinate about the role of lasers in medical and dental care. She serves on the faculty of three universities and has a background in periodontal research. Many of her patients are referred by physicians and oral surgeons eho appreciate the use of lasers to help mange oral cancers and auto-immune diseases.

Using Lasers to Help Diagnose & Manage Auto-Immune Diseases

Auto-immune diseases are becoming more common since the advent of Covid. Often called silent diseases, the patients often do not appear ill in general, but suffer quietly with pain and lifestyle limitations. Lasers can be helpful for both ablative treatments and photobiomodulation for healing and pain control. This presentation will help the practitioner with diagnostic skills to realize the signs and symptoms of these diseases as well as the multiple possible etiologies. The use of lasers can be life-changing for patients and eleviate much anxiety and suffering.

VIELIGHT

ALD / WALT / NAALT 2026 · SAHARA LAS VEGAS · OCTOBER 15 TO 17

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NICK CLAUSEN, MBA



Nick Clausen is a business strategist and dental practice consultant specializing in helping owner-doctors transition from primary producer to Dental CEO. With expertise in leadership development, profitability, enterprise design, and laser optimization, he spent five years as a business coach with Fortune Management, advancing to an F50 coach for some of the nation's highest-producing dentists. As founder of Dental Laser Coaching, he has coached practices nationally for over 15 years, bridging clinical excellence with financial performance. Nick holds a BBA from Iowa State University, an MBA from Creighton University, and executive education from Georgia Tech and Harvard Law School.

Laser to Legacy: Converting Clinical Excellence into Long-Term Wealth

Many laser dentists create best-in-class clinical outcomes and patient experiences—yet the practice production does not always reflect that level of excellence. When production, collections, and EBITDA depend entirely on the systems and teams the owner builds, poor structure silently suppresses valuation and eliminates freedom. This presentation is specifically designed for the owner-doctor who wants to transition from primary producer to Dental CEO and ultimately build an enterprise that delivers maximum value and time freedom. This is not something that can be engineered one year before retirement—the foundation must be built early and intentionally. Attendees will learn how to shift from working in the practice to working on the business by adopting a CEO mindset centered on communication, leadership, accountability, and scalable profitability. We will explore growth strategies that expand revenue without adding clinical days, including the four revenue streams of a successful dental enterprise. Participants will gain clarity around the Key Performance Indicators (KPIs) that influence valuation, how to structure accountable leadership within the team, and the critical differences between being a boss and becoming an effective leader. Practical systems will be provided for conflict resolution, corrective communication, and internal leadership development. The goal is simple: build a practice that thrives without you at the center—so when you are ready to exit, your business commands premium value and creates long-term wealth.



ALI OBEIDI, DDS, MSc, MS, FALD

Dr. Ali Obeidi is a prosthodontist and laser dentistry expert whose interest in lasers began with dental research in 1998. He pursued advanced training in laser dentistry at RWTH Aachen University and earned a Master's in Clinical Dentistry–Biomaterials from the University of Alabama at Birmingham, followed by specialty training in Prosthodontics at Rutgers University. As a former Assistant Professor at the University of Texas Health Science Center at Houston, he helped develop and co-direct the institution's laser dentistry curriculum. A member of the Academy of Laser Dentistry since 2007, Dr. Obeidi is a Fellow and Advanced Proficiency-certified clinician who serves on the ALD Board of Directors and multiple committees, and as editor of Lightwave. His work bridges laser science, biomaterials, prosthodontics, and practical clinical dentistry.

When Evidence Falls Short: Rethinking How We Interpret Research in Laser Dentistry

Evidence-based dentistry has become an essential foundation of modern clinical decision-making. However, confusion often arises when clinicians encounter procedures that appear to work reliably in practice but lack extensive randomized clinical trials. This situation is particularly common in laser dentistry, where technological innovation frequently progresses faster than the research needed to formally document every clinical application. This presentation introduces a well-known satirical example from medical literature in which researchers humorously demonstrated that no randomized trials existed proving that a life-saving device actually prevents death when jumping from an aircraft. The example illustrates an important lesson in scientific interpretation: the absence of published evidence does not necessarily mean that a technique is ineffective. This concept is highly relevant to laser dentistry. Many laser-assisted procedures—such as soft-tissue surgery, bacterial reduction, implant surface decontamination, and photobiomodulation for pain control—are widely used by clinicians who consistently observe positive outcomes. Yet these applications are sometimes dismissed simply because large-scale trials or standardized protocols are still evolving. Using this analogy as a starting point, this presentation encourages clinicians to look at scientific literature with a broader perspective—recognizing both the value and the limitations of published evidence while considering biological plausibility and real-world clinical outcomes. The goal is to stimulate thoughtful discussion about how innovation, clinical experience, and research can work together to strengthen the scientific foundation of laser dentistry.



JANINA GOLOB DEEB, DMD, MS

Dr. Janina Golob Deeb earned her dental degree from the University of Ljubljana, Slovenia, followed by a Certificate in Periodontology and Master's in Oral and Molecular Biology from Oregon Health Sciences University. A board-certified periodontist, she practiced for 13 years before joining Virginia Commonwealth University School of Dentistry, where she has served as Professor since 2022 and Director of Predoctoral Periodontics since 2018. Her clinical expertise includes surgical and non-surgical periodontal therapy, laser dentistry, and dental implantology. She is actively involved in undergraduate and graduate education and research focused on periodontology, implantology, lasers, and dental education.

Use of Erbium Lasers for Debonding

Removal of all-ceramic restorations can be time consuming and challenging. Erbium lasers offer an alternative noninvasive method for removal of ceramic restorations from implants and teeth, as well as fiber posts and brackets. Erbium lasers used for debonding include Er:YAG and Er,Cr;YSGG. They are both effective noninvasive tools and may be considered as a viable alternative to using rotary instrumentation for removal of ceramic restorations without causing harm to abutments or prosthesis. The retrieval process by laser does not destroy the restorations, thus they can be used as temporaries or recemented in improved position following laser-assisted debonding. This lecture aims to summarize the research findings and clinical examples using erbium lasers for debonding of various restorations and appliances from natural teeth and dental implants. Effective protocols for various ceramics and cement types will be discussed supported by current evidence and laser parameters. Clinical cases include debonding of veneers, single crowns and fixed partial dentures of natural teeth and implant abutments cemented with various cement materials. Laser settings affect the debonding time and the increase in temperature. Examination under magnification of debonded ceramics demonstrates minimal structural effects resulting from laser applications when appropriate parameters are used. When used incorrectly, side effects may include temperature rise and damage to tooth structures. Duration of procedure to retrieve a ceramic restoration is influenced by type of ceramic, its translucency and thickness, surface area of abutment and restoration, type of restoration and its retentive features, and types and thickness of cement used.

SALEH ANVARIA ARIA, DDS, MSc



Dr. Saleh Aria is a clinician, educator, and international speaker specializing in implant dentistry, laser-assisted dentistry, and advanced restorative care. Principal Dentist at The Harrow Dental Practice in London since 2001, he is also Founder of the Esthetic Dental Academy and Chair of the International Committee of the Academy of Laser Dentistry. He holds an MSc in Dental Lasers and is actively involved with leading international dental organizations. His clinical expertise includes implant placement, bone and ridge augmentation, sinus floor elevation, and advanced soft-tissue management, with a focus on laser-assisted protocols that enhance precision and healing. Dr. Aria regularly lectures internationally on innovative techniques for complex patient care and clinical excellence.

Laser-Assisted Implantology: Improving Precision, Stability, and Healing in Implant Treatment

Dental implant therapy has become a predictable treatment modality; however, achieving optimal precision during surgery, maximizing primary stability, and promoting rapid soft- and hard-tissue healing remain key determinants of long-term success. The integration of dental laser technology into implantology has introduced new opportunities to enhance surgical accuracy, minimize tissue trauma, and improve postoperative outcomes. This lecture will explore the clinical role of laser-assisted implantology across multiple stages of implant treatment, including soft-tissue management, bone preparation, implant site decontamination, and peri-implant tissue modulation. Particular emphasis will be placed on the use of all-tissue laser systems, such as the Er,Cr:YSGG 2780 nm wavelength, which enables precise interaction with both soft and hard tissues while preserving surrounding biological structures. The presentation will discuss how laser energy can facilitate minimally invasive surgical approaches, enhance visibility through improved haemostasis, reduce bacterial contamination, and stimulate photobiomodulation effects that support faster healing and improved patient comfort. Clinical cases will demonstrate the application of lasers in immediate implant placement, implant site preparation, peri-implantitis management, and soft-tissue contouring. Evidence-based principles, laser-tissue interaction mechanisms, and practical clinical protocols will be reviewed to help clinicians integrate laser technology safely and effectively into implant treatment workflows. By combining advanced laser technology with modern implant concepts, clinicians can achieve greater surgical precision, improved implant stability, and enhanced biological healing responses.

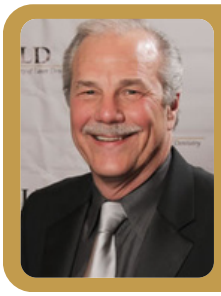
NATALIA ELSON, DDS



Dr. Natalia Elson is a Clinical Associate Professor and Group Practice Director at NYU College of Dentistry, with more than four decades of clinical and educational experience. Her expertise includes comprehensive care, laser and digital dentistry, implantology, and minimally invasive treatment. A leader in laser education, she serves on the Board of Directors of the Academy of Laser Dentistry and chairs its Academia & Education Committee, while also serving as Chair-Elect of ADEA's Special Interest Group on Lasers in Dentistry. Dr. Elson is dedicated to student mentorship, faculty development, and integrating emerging technologies into dental education and patient care. She lectures nationally and internationally on laser applications, digital workflows, and modern dental technologies.

Laser Dentistry as a Transformative Educational Tool: Opportunities & Barriers in Academic Integration

The rapid evolution of dental technology requires academic leadership to ensure that graduates are prepared to deliver minimally invasive, technology-driven care. Laser dentistry represents both an advanced clinical modality and a strategic educational tool that can enhance student engagement, clinical competence, and interdisciplinary learning. This presentation evaluates the integration of laser dentistry into dental curricula through a structured, outcomes-based educational framework. A phased implementation model is proposed, beginning with foundational didactic instruction focused on laser physics, safety, and tissue interaction, followed by simulation-based training to develop psychomotor skills, and culminating in supervised clinical application. Integration within existing disciplines—including periodontics, restorative dentistry, and oral surgery—allows efficient incorporation without increasing curricular burden. Defined competencies, standardized safety certification, and objective assessment methods support consistency and measurable student outcomes. Educational leadership plays a critical role in successful implementation. Faculty development, calibration, and mentorship ensure alignment across departments and promote confidence in teaching laser applications. Administrative support and resource allocation further enable sustainable integration. Measurable outcomes include increased student participation in laser-assisted procedures, improved clinical decision-making, enhanced patient communication, and greater readiness for contemporary practice. Key challenges include financial investment, curriculum time constraints, and resistance to change; however, these can be addressed through phased adoption, interdisciplinary collaboration, and structured faculty training programs. Laser dentistry serves as a catalyst for modernizing dental education. Through intentional curriculum design and leadership-driven implementation, academic institutions can produce graduates who demonstrate competency in emerging technologies, apply evidence-based clinical reasoning, and deliver patient-centered care aligned with current standards of practice.



MEL A. BURCHMAN, DDS, MALD

Dr. Burchman has been using lasers in his practice since 1998 and had 8 lasers in his practice. In 2003, he received the "Science Behind the Clinic of Laser Dentistry" award, and his office was written up in Men's Health Magazine. In 2012, he was awarded the Leon Golman Award for Clinical Excellence. He is a Certified Laser Educator, a Recognized Course Provider, and was one of the first ALD members to receive the Mastership in Laser Dentistry. He has been a member of the ALD Board and Executive Committee and, in 2019, was the ALD President. He has been published several times and, in 2020, was one of the founders of GMA Laser Education. He has presented on laser dentistry all over the world and loves teaching other healthcare professionals the many benefits of laser dentistry. He would never want to practice without his lasers, and they have allowed him to treat many medically compromised patients that he would never have been able to treat without them.

Utilizing Photobiomodulation (PBM) to Treat Cancer Symptoms & Cancer Treatment Side Effects

As we all know cancer is a devastatingly painful desease, both in it's symptoms and unfortunately also during it's treatment. Some of the cancer treatent side effects are so painful that patients just want to stop their ttreatments and die in peace. Over many years of practice I have treated many patients, friends and family members that are experiencing this horrible desease, from a young girl of 3 to senior citizens. During this time I have developed several techniques for treating the symptoms and side effects of this dreaded desease. I also have had the joy of helping these people in their time of great pain. As a matter of fact, at this time I am helping a dear friend who is battling breast cancer. I have taught her how to treat her pain and symptoms and have leant her one of my lasers and it just makes me feel wonderful when I speak to her and she tells me she is using the laser everyday and it really is helping her. Several years ago I was sent a patient by Dr. Chip Whitney that had colon and liver cancer and said the first round of chemo and radition were so painful he wanted to discontinue treatment. Dr. Whitney talked him in to seeing me saying, "what do you have to lose.' Well the treatment results were excellent and the patient completed his treatment. Dr. Whitney. wrote an article about me and my treatment in the Academy of Oral and Systemic Health Journal and said, "My patient said the results of the laser treatment were LIFE CHANGING" and "Now thanks to my recommendation my patient will complete his treatment" On a more personal note, I was able to treat and help my wife Sue during her 3 year bout with advanced pancreatic cancer. I love helping these people and want to teach others how to preform these treatments for nausea, digestive problems, neuropathy, cold fingers, loss of taste, headaches and oral mucositis.



MOHAMED YEHYA, DDS, PhD

Dr. Yehya holds BDS, MDS, and PhD degrees and serves as Medical Director of Shine N White Dental Center in Egypt and Diamond Medical Center in the State of Qatar. He is also a Researcher at NILES, Cairo University, Egypt.

From Perforation to Preservation: A Laser-Led Amazing Human Body Regeneration, Laser-Assisted Multimodal Management of an Extensive Mandibular Periapical Granuloma with Cortical Plate Perforation & Risk of Pathological Fracture

Extensive periapical lesions with cortical plate perforation and advanced mobility are often considered hopeless and treated by extraction, particularly when structural compromise raises concern for pathological fracture. This case describes the successful preservation of severely compromised mandibular anterior teeth using a laser-integrated, multidisciplinary approach. A medically fit patient presented with persistent purulent discharge from an extraoral chin sinus tract, chronic discomfort, and mobility of the mandibular anterior teeth. Previous consultation had recommended extraction of teeth 32–43 due to severe bone destruction and risk of pathological fracture. Clinical examination revealed Grade III mobility in tooth 31, Grade II mobility in teeth 32, 41, and 42, and Grade I mobility in tooth 43. CBCT demonstrated a large, well-defined radiolucent lesion measuring 21.5 mm mesiodistally and 13.7 mm superoinferiorly, extending from teeth 32 to 43. The lesion perforated the labial cortical plate and extended lingually, leaving less than 1 mm of lingual cortical thickness. All involved teeth were non-vital. Initial therapy included scaling and root planing, emergency access, chemomechanical preparation, intracanal medicament placement, and laser-assisted disinfection. Photodynamic therapy using a green photosensitizer activated with an 810-nm diode laser and 300-µm fiber was applied intracanal and to the periodontal pockets. The teeth were splinted prior to surgical intervention to enhance stability. Surgical management included full-thickness flap reflection, extensive curettage, apicectomy, and retrograde mineral trioxide aggregate filling. Adjunctive 810-nm photothermal irradiation was performed to eliminate residual granulation tissue prior to grafting. The defect was reconstructed using platelet-rich fibrin combined with particulate bone allograft, followed by postoperative photobiomodulation therapy. Histopathological analysis revealed chronic inflammatory granulation tissue consistent with a periapical granuloma, confirming the endodontic origin of the lesion. Early follow-up demonstrated resolution of the sinus tract, improved tooth stability, and favorable soft tissue healing, with radiographic monitoring ongoing to evaluate bone regeneration. This case demonstrates that a laser-integrated, multidisciplinary approach may enable preservation of teeth previously deemed hopeless, even in the presence of extensive cortical perforation, and highlights the potential of advanced laser protocols in the management of large inflammatory periapical lesions.

HAITHAM ELAFIFI, DDS

Dr. Elafifi is a dentist and academic based in Zaragoza, Spain, with a private practice focused on endodontics, restorative dentistry, laser applications, and oral surgery. He is an Associate Professor at the University of Zaragoza and holds a Master's degree in Laser Dentistry from the University of Barcelona, where he also serves as a teaching collaborator. His postgraduate training includes Endodontics and Orthodontics, while his clinical and research interests focus on laser dentistry, photobiomodulation, and minimally invasive therapies. Dr. Elafifi has authored scientific publications in international journals and is actively involved in postgraduate education, lecturing in Laser Dentistry and Endodontics programs at the Universities of Barcelona and Zaragoza.



Thermal Imaging—Monitored At-Home PBM Therapy for Orofacial Inflammatory Processes

Orofacial inflammatory conditions, including temporomandibular disorders, post-surgical inflammation, neuropathic pain, and mucosal lesions, are frequent clinical challenges that can significantly affect patient comfort and quality of life. Photobiomodulation therapy (PBMT) has gained increasing attention as a non-invasive treatment modality capable of modulating inflammation, reducing pain, and promoting tissue healing. Recent advances in portable light-based devices have enabled the application of PBMT in home settings, potentially expanding treatment accessibility and patient autonomy. This presentation explores the potential integration of at-home PBMT with infrared thermal imaging as a monitoring tool for orofacial inflammatory processes. Infrared thermography allows detection of subtle variations in skin temperature associated with vascular and inflammatory changes, while sequential thermal imaging of the orofacial region may provide a non-invasive method to monitor inflammatory activity, identify thermal asymmetries, and evaluate response to PBMT over time. Combining home-based PBMT protocols with periodic thermal imaging could allow clinicians to remotely monitor treatment progress and adjust therapeutic parameters when necessary. This integration may provide a personalized, technology-assisted approach to managing orofacial inflammation, potentially reducing the need for frequent clinical visits while maintaining objective follow-up. At-home PBMT combined with thermal imaging monitoring represents a promising strategy for the management of orofacial inflammatory conditions, although further clinical research is needed to establish standardized protocols and validate its clinical effectiveness.

MD ARIFUR RAHMAN, BDS, MSc

Dr. Rahman is a passionate dental professional with 20+ years of experience, he began his journey as a dental surgeon in 2004. He has served as an Assistant Professor & Dental Unit Head, teaching multidisciplinary students in medical and public health programs. Now focused solely on his private practice, he specializes in modern dental care, including laser dentistry, certified by the Academy of Laser Dentistry.



Laser-Assisted Management of Severely Curved Canals to Prevent Ledge Formation

The chemo-mechanical preparation of root canals with severe curvatures presents a significant clinical challenge, often predisposing teeth to iatrogenic procedural errors such as ledge formation, canal transportation, and apical zipping. Ledge formation can prevent adequate disinfection and obturation of the apical third, contributing to persistent periapical infection. Diode laser-assisted endodontics has recently emerged as a promising adjunct to traditional mechanical preparation. This case presents the management of a mandibular molar with a severely curved mesial root, in which mechanical instrumentation was minimized to preserve the original canal anatomy and reduce the risk of procedural complications. Diode laser-activated irrigation was utilized to facilitate deep dentinal disinfection and smear layer removal. Radiographic evaluation demonstrated successful canal negotiation, cleaning, and dense three-dimensional obturation that seamlessly followed the natural curvature of the canal. The integration of diode laser technology in the management of complex canal curvatures may enhance irrigant penetration and disinfection, reduce the need for aggressive mechanical filing, minimize the risk of ledge formation, and facilitate a highly adapted root canal seal while preserving the natural canal anatomy.

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ALAN KWONG HING, DDS, MSc

Dr. Alan Kwong Hing, DDS, MSc, is a clinician, researcher, and systems architect specializing in photobiomodulation, artificial intelligence, and emerging healthcare technologies. With over two decades of clinical experience and advanced training in pathology and AI in dentistry, his work focuses on integrating technology while preserving patient-centered care. He is the originator of Humanistic AI Architecture™ (HAIA), a "Presence-First" framework designed to reduce cognitive load and enhance clinical clarity. As founder of PBM Healing International, Dr. Kwong Hing lectures internationally on photobiomodulation, digital workflows, and responsible AI implementation, with current research exploring AI-driven dosimetry and governance for consistent laser and LED therapies.

Bridging Chairside Laser Therapy & At-Home PBM: An AI-Enhanced Model for Improving Clinical Consistency & Patient Compliance

Photobiomodulation (PBM) with lasers is widely applied in dental practice for pain reduction and tissue healing; however, treatment is typically limited to chairside delivery, with minimal reinforcement between visits, which may contribute to variability in clinical outcomes. Integrating at-home LED-based PBM with structured clinical workflows may improve continuity of care, while emerging AI-supported approaches may further enhance treatment consistency. This presentation describes a clinically oriented workflow integrating chairside laser PBM with structured at-home LED reinforcement. Typical chairside laser parameters include wavelengths of 810–980 nm, energy densities of 2–8 J/cm², and localized in-contact application, while at-home LED protocols may utilize wavelengths of 630–660 nm and/or 810–850 nm, energy densities of 2–6 J/cm², and broad-area daily application. The workflow incorporates initial laser-based biologic activation, scheduled LED reinforcement between visits, patient compliance guidance, and protocol standardization. AI-enhanced elements are introduced conceptually to support parameter consistency, cumulative dose awareness, and reinforcement timing guidance. Integrated workflows may improve continuity of PBM delivery between visits, while AI-supported modeling may reduce variability in dosing patterns and enhance consistency of the biologic response. Potential clinical benefits include improved patient comfort, more consistent healing trajectories, increased patient engagement, and enhanced clinical outcomes. Bridging chairside laser therapy with structured at-home PBM represents a practical clinical model for improving treatment consistency, while AI-enhanced workflow support offers a promising adjunct for standardizing PBM delivery while preserving clinician-directed care. This presentation describes a clinical workflow and conceptual modeling and does not report new human or animal experimentation.

MAKI TANAKA, DDS, PhD



Dr. Maki Tanaka graduated from Nippon Dental University in 2003, earning a Doctor of Dental Surgery (DDS) degree. She subsequently completed her doctoral studies in Periodontology at the School of Dentistry, Ohu University, where she attained her Ph.D. In 2015 she assumed the position of Chairperson of the Seikeikai Clinic, where she currently oversees the operations of two private dental clinics. Since 2008, she has specialized in laser therapy, integrating lasers with various wavelengths into her clinical practice to provide comprehensive, multi-modal laser treatments. Dr. Tanaka is also a graduate of the LA&HA Dental Laser Masters program which she completed in 2019. Her clinical achievements—particularly in the fields of periodontology and implant dentistry are highly acclaimed throughout Japan.

Combination Laser Therapy—Effectively Using Multiple Wavelengths for Best Overall Treatment Results

With 20 years of experience with dental lasers in my practice, the use of lasers makes difficult cases easier with the ability to precisely and accurately perform treatments resulting in merits for both patients and doctors. In addition, selectively combining multiple laser modalities with different wavelengths allows for customized treatments and increased accuracy. For periodontal treatment, 635nm diode laser can be used for a-PDT to disinfect the periodontal pocket or surgical sight post op treatment. Combined with 2940nm Er:YAG laser for areas biologically difficult to access such as deep pocket or root furcation in non-surgical procedures or debridement in surgical procedures. NIR lasers can be used for PBM to induce a faster, better healing process. I will be discussing the importance of understanding characteristics of each laser wavelength and share some of my cases combining multiple wavelengths for overall customized treatment.

ERNESTO VATTERONI, DDS, PhD



Dr. Ernesto Vatteroni is an oral surgeon and implantologist with an international academic and clinical profile. He graduated with honors in Dentistry from the University of Florence and holds an MSc in Oral Surgery and Implantology and a PhD in Health Systems Management. His expertise includes advanced implantology and complex cases involving severe bone atrophy, with a focus on cost-effective, minimally invasive solutions for implant rehabilitation. Dr. Vatteroni is a contract professor at UniCamillus, an active researcher and international speaker, and maintains clinical practices across Italy, Serbia, and the United Kingdom.

Laser-Induced Hypoxia of the Post-Extraction Socket to Preserve Bone Volume Without Grafting

Post-extraction sockets undergo significant dimensional resorption, particularly in the anterior maxilla. This study investigated whether a 980-nm diode laser could induce transient hypoxia and preserve ridge dimensions without grafting or immediate implant placement. Three healthy patients undergoing maxillary first premolar extraction were treated with a non-contact diode laser over the blood clot for 2 minutes using a hemostasis setting, creating a superficial vitrified layer to seal the socket. No grafts or membranes were used. Pre- and 4-month postoperative CBCT and digital scans were superimposed to evaluate hard and soft tissue changes, with core biopsies obtained at implant placement for histological analysis. Bone contraction averaged 5% and soft tissue contraction 3%, substantially below reported values for ungrafted, unsealed sockets. At implant placement, all sockets were filled with newly formed bone of adequate quality for osseointegration. Despite the limited sample size (n=3), the consistent results suggest that diode laser-induced superficial vitrification may promote transient hypoxia, reduce tissue contraction, and preserve alveolar ridge dimensions. This simple, minimally invasive technique warrants further investigation in larger controlled clinical trials.



LARRY LIEBERMAN, DDS

Dr. Lieberman earned his DDS from New York University College of Dentistry in 1982 and completed a General Practice Residency at Bergen Pines Hospital. A Fellow of the Academy of General Dentistry, Academy of Osseointegration, and International Congress of Oral Implantology, he has completed advanced training at the Aesthetic Advantage Institute, Misch Implant Institute, Pankey Institute, and Dawson Center. Dr. Lieberman is certified in four laser wavelengths—Erbium, Nd:YAG, CO_2, and Diode—as well as IV and oral sedation. A respected educator and national lecturer, he has taught for leading dental organizations and the University of Florida College of Dentistry and is a co-founder of the Advanced Laser Training Institute.

Lasers for the GP and Beyond

You need to learn about lasers—and here's why. For more than three decades, I have incorporated laser technology into my daily dental practice, using it throughout the day for a wide range of procedures, many of which would be difficult or impossible to perform without it. Laser dentistry benefits not only patients through improved comfort and outcomes, but also enhances team engagement, practice efficiency, and profitability. Integrating laser technology can help elevate your practice to a true state-of-the-art level.

While laser-assisted tooth preparation is often what first comes to mind, it is only the beginning. Discover why lasers have become one of the most effective tools for treating periodontal disease, peri-implantitis, root canal infections, and many other clinical conditions. Learn about photobiomodulation and how this exciting technology can promote healing, reduce inflammation, and provide pain relief. Explore advanced laser applications in facial esthetics that can help reverse visible signs of aging, as well as innovative procedures such as NightLase®, which can reduce snoring and improve symptoms associated with sleep apnea.

With more than 40 years of clinical dental experience and over 30 years of laser expertise, I will share practical, real-world techniques that can be immediately incorporated into your practice to improve patient care and expand treatment possibilities.



AMBROSE CHAN, PhD, MSc, BDS, FRACDS, FICD

Dr. Chan is a Fellow of the Royal Australasian College of Dental Surgeons with over 40 years of clinical experience using photonic technologies in general dentistry. He has represented the Australian Dental Association and Standards Australia on laser dentistry for more than 30 years and holds a PhD in Medicine focused on photobiomodulation. A recipient of the 2010 WFLD Best Scientific Research Award, he has lectured internationally and held leadership roles with the WFLD, organizing conferences and developing evidence-based laser training curricula. Dr. Chan is a Fellow of the International College of Dentists, Honorary Assistant Professor at the University of Hong Kong, and Honorary Research Fellow at the University of Sydney.

Integrated Photonics-Enhanced Precision Dentistry—Current Status & Future Trends of Applications Across Dental Disciplines

Photonics is revolutionizing 21st-century dentistry through its precision, speed, efficiency, versatility, and enhanced productivity. Dental photonics encompasses photon-based technologies including lasers, diode lasers, LEDs, and broadband light, and has become increasingly integrated into modern clinical practice, supporting minimally invasive, regenerative, and patient-centered care while improving clinical efficiency and workflow. The integration of photonics with cone-beam computed tomography (CBCT) and digital dentistry—including optical scanning, manufacturing, and radiography—has further expanded diagnostic capabilities and enhanced procedural precision and predictability across dental disciplines. This presentation will highlight the major technological advancements and evidence-supported clinical applications of integrated dental photonics, while exploring emerging technologies and future trends. Ultimately, integrated dental photonics represents a rapidly evolving framework for converging digital dentistry, artificial intelligence, robotic-guided procedures, and personalized theranostic technologies into a more precise and integrated approach to oral healthcare.

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DENTAL HYGIENIST TRACK SPEAKERS



LYNN ATKINSON, RDH

Lynn Atkinson, RDH, is a Registered Dental Hygienist with over 35 years of clinical experience and a passion for advancing patient care through technology and education. She holds Standard and Advanced Proficiency Certifications from the Academy of Laser Dentistry and an Associate Fellowship with the World Clinical Laser Institute. Lynn specializes in comprehensive periodontal care, Guided Biofilm Therapy, and adjunctive laser protocols. In addition to clinical practice, she lectures nationally, provides hands-on training, and serves as an EMS Guided Biofilm Therapy trainer and speaker. An active ALD leader and Standard Level Course Provider, she received the 2022 ALD Leon Goldman Clinical Excellence Award and 2024 Western Society of Periodontology Hygiene Speaker of the Year Award.

"Lighting the Way" Photobiomodulation for Healing, Pain, and Health in Hygiene

Photobiomodulation (PBM), formerly known as low-level laser therapy, is emerging as a powerful adjunct in periodontal and implant care. By delivering low-dose red and near-infrared light to tissues, PBM can modulate mitochondrial function, reduce inflammation and pain, and enhance wound healing without cutting or ablating tissue. This course translates the science into practical chairside protocols tailored to periodontists, hygienists, and restorative clinicians. We will review current evidence for PBM in periodontal wound healing, post-operative pain, oral mucositis, TMD/orofacial pain, and peri-implant therapy, along with real-world parameters for diode lasers commonly used in practice. Attendees will leave with a clear framework for integrating PBM into existing workflows—from diagnosis and case presentation to post-op care and maintenance.

ERIN DOFFONEY, RDH



With over 25 years of experience as a dental hygienist, Erin is a compassionate, patient-centered clinical provider and educator known for building trust and creating comfort in challenging situations. Her approach combines technical expertise with empathy, patience, and genuine care, empowering both patients and colleagues. Drawing on years of professional experience and personal resilience, she brings a calm, adaptable presence to every interaction. She is dedicated to uplifting others and advancing patient care through education, integrity, and meaningful connection.

Deferring & Referring With Confidence: Clinical Judgement, Ethical Responsibility, and Collaborative Care Decision-Making for the Dental Team

The increasing integration of laser-assisted periodontal therapy into dental hygiene and general practice settings has expanded nonsurgical treatment capabilities while simultaneously increasing the need for evidence-based case selection and interdisciplinary referral decision- making. This presentation examines clinical indicators that distinguish patients who may benefit from conservative laser-assisted periodontal therapy from those who require comprehensive periodontal evaluation and specialty intervention. Emphasis will be placed on assessment of periodontal staging and grading, persistent inflammation, refractory disease patterns, furcation involvement, mobility, osseous defects, peri-implant complications, systemic risk factors, and patient-specific considerations that influence prognosis and treatment outcomes. The current literature on laser-assisted periodontal therapy, risk assessment protocols, and collaborative management strategies will be reviewed to support ethical and patient-centered clinical decisions. Attendees will gain practical guidance on recognizing the limitations of nonsurgical therapy, improving communication with periodontal specialists, and developing referral protocols to enhance long-term periodontal stability and patient care outcomes.



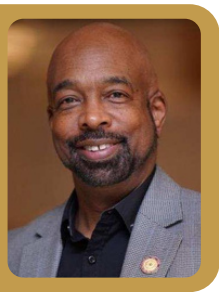
ANGIE WALLACE, RDH

Angie Wallace, RDH, is a clinical hygienist with over 35 years of experience and more than 25 years of involvement with the Academy of Laser Dentistry (ALD), where she holds Advanced Proficiency, Educator, and Mastership status. She serves on the ALD Education, Regulatory Affairs, and Auxiliary committees and was named ALD Educator of the Year and ADHA Entrepreneur of the Year in 2023. A recognized international speaker and published author on dental hygiene and lasers, Angie is also an in-office laser consultant and founder of Laser Hygiene, LLC, providing laser education and training to dental professionals nationwide.

Are the Rules & Regulations for Lasers in Dental Hygiene Changing Again?

In this presentation, the attendees will see the States that allow Hygienists to use lasers, along with what the verbiage in each State lists. We will visit the hours needed for a hands on requirement, as well as the understanding of what it means to have training, certificate of completion or a certification course. We will also discuss what ALD has to offer in our certification courses and how these stand out from others you may have seen listed on websites or social media pages.

ALFRED WYATT, DMD



Dr. Alfred Wyatt, Jr. has practiced dentistry for over 40 years and has more than 20 years of experience with lasers and light technologies in dentistry. He earned his DMD from the Medical College of Georgia in 1984 and currently serves as Associate Professor of Oral Rehabilitation at his alma mater. A member and former board member of the Academy of Laser Dentistry, Dr. Wyatt holds Advanced Proficiency and Educator Status and currently chairs its Certification Testing Committee. He has authored and co-authored publications on light technologies, trained dentists internationally, and maintains active involvement in numerous professional dental organizations. He also serves as a dental editor for WebMD.

Illuminating Precision: Understanding Laser Wavelengths in Dental Hygiene

Lasers have revolutionized modern dentistry, offering enhanced precision, reduced discomfort, and improved healing outcomes. This presentation explores the role of different laser wavelengths in dental hygiene, emphasizing their applications, benefits, and limitations. Attendees will gain insight into how various wavelengths interact with oral tissues, their impact on clinical procedures, and how dental hygienists can integrate laser technology to optimize patient care. By understanding the science behind laser wavelengths, dental hygienists can enhance treatment outcomes and confidently incorporate lasers into their practice.



LAURA BRASWELL, DDS

Laura Braswell is a Periodontist in Atlanta, GA who is passinate about the role of lasers in medical and dental care. She serves on the faculty of three universities and has a background in periodontal research. Many of her patients are referred by physicians and oral surgeons eho appreciate the use of lasers to help mange oral cancers and auto-immune diseases.

Periodontal Disease: The Oral Systemic Connection

Auto-immune diseases are becoming more common since the advent of Covid. Often called silent diseases, the patients often do not appear ill in general, but suffer quietly with pain and lifestyle limitations. Lasers can be helpful for both ablative treatments and photobiomodulation for healing and pain control. This presentation will help the practitioner with diagnostic skills to realize the signs and symptoms of these diseases as well as the multiple possible etiologies. The use of lasers can be life-changing for patients and eleviate much anxiety and suffering.

LAURIE BRICKER, RDH, MS



Laurie Bricker, M.S., RDH, is an Assistant Clinical Professor and Junior Clinic Coordinator at Texas Woman's University, where she teaches dental hygiene, pharmacology, pain management, and local anesthesia. She holds a Master of Science in Nutrition and a Bachelor of Science in Dental Hygiene, with extensive clinical experience in California. A former BIOLASE consultant and faculty member, Laurie has implemented laser programs, trained dental teams, and advanced laser-assisted therapy in clinical practice. Her research focuses on laser bacterial reduction and evidence-based technologies in dental hygiene education. She is a Member of the Academy of Laser Dentistry and an active educator, researcher, mentor, and advocate for innovation in dental hygiene.

From Operatory to Educator: The RDH-to-Faculty Journey Through Laser Dentistry & Higher Education

The evolution from clinical dental hygienist to academic faculty member is a journey driven by passion, purpose, and professional growth. This presentation explores one hygienist's transition from private practice clinician and laser-certified provider to educator, mentor, and graduate-level scholar. Through the integration of laser dentistry, advanced education, and a commitment to lifelong learning, this session highlights how clinical experience can become the foundation for shaping future generations of dental professionals. Attendees will gain insight into the challenges, opportunities, and transformational moments involved in moving from chairside care to the classroom. The presentation will discuss the role that laser education and certification played in expanding professional confidence, opening leadership opportunities, and inspiring a pathway toward earning both bachelor's and master's degrees. Emphasis will also be placed on the importance of mentorship, professional organizations, and advocacy for advancing the role of the dental hygienist within education and interdisciplinary care. This inspiring and relatable session is designed for clinicians considering career advancement, educators seeking to empower future professionals, and dental teams interested in the expanding impact of laser-trained hygienists in academia and patient care alike.

POSTER COMPETITION



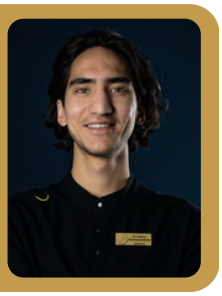
SHRUTI NATARAJAN, DDS

Shruti Natarajan is a third-year Periodontics resident at Virginia Commonwealth University and is expected to graduate in 2027. She earned her Doctor of Dental Surgery (DDS) degree from Texas A&M University College of Dentistry in Dallas, Texas. Throughout her residency, Shruti has developed clinical experience with a variety of dental laser applications in periodontal therapy. Her experience includes the use of lasers for scaling and root planing, gingivectomy, vestibuloplasty, and the management of peri-implantitis. She has also utilized photobiomodulation (PBM) therapy in the treatment of oral lesions, neuropathic symptoms, and pain management. Shruti's clinical and academic interests focus on the integration of laser technology into evidence-based periodontal care to improve patient outcomes.

The Resolution of Oral Lesions with PBM Therapy: A Case Report

This case report demonstrates the resolution of symptomatic oral mucosal lesions following adjunctive photobiomodulation (PBM) therapy. A 63-year-old female presented with generalized symptomatic oral mucosal lesions characterized by diffuse white ulcerations surrounded by erythema involving the bilateral buccal mucosa and lower lip vermillion border. Her medical history included rheumatoid arthritis managed with methotrexate and folic acid, which may have contributed to the oral ulcerations. Standard therapy with topical clobetasol 0.05% and dexamethasone 0.5 mg/5 mL rinse was initiated, along with three adjunctive PBM sessions performed every 4–5 days using a 1064-nm Nd:YAG laser at 0.5 W/cm² and 10 Hz. PBM was applied for one minute per site to affected intraoral areas and regional lymph nodes. Following treatment, the lesions completely resolved and the patient reported full resolution of symptoms. This case highlights the potential benefit of adjunctive PBM in managing severe inflammatory oral mucosal lesions, particularly in patients with autoimmune conditions. While complete resolution was achieved with PBM combined with topical corticosteroid therapy, controlled clinical trials are needed to further evaluate its efficacy in inflammatory and autoimmune oral conditions.

ABDUKHAMIDJON AZIMOV, DDS, MS



Dr. Abdukhamidjon Azimov is an oral surgeon and researcher specializing in laser applications in oral and maxillofacial surgery. He holds a Master of Dental Science in Oral Surgery from the University of Malaya, where his research focused on novel fiber laser technologies for oral soft-tissue surgery, with findings published in Lasers in Medical Science. His clinical and research experience includes Alma Pixel CO_2 and ultrashort-pulsed fiber laser systems, with interests in minimally invasive surgical technologies and translational research. Dr. Azimov has trained internationally across Uzbekistan, Malaysia, Spain, and Türkiye and remains actively involved in advancing laser-assisted oral surgery.

Comparative Evaluation of Cutting Accuracy & Thermal Damage in Oral Soft Tissue Using Novel Fiber Lasers & Conventional Surgical Techniques

This ex vivo study compared cutting accuracy and thermal damage following oral soft tissue incisions produced by six surgical techniques: 2000-nm CW silica-based TDF laser, 1550-nm CW silica-based EYDF laser, electrosurgery, 980-nm diode laser, 2000-nm ultrashort-pulsed (USP) silica-based TDF laser, and scalpel. Sixty standardized sheep oral mucosa specimens were randomly assigned to six groups (n=10). Cutting accuracy was assessed using 3D surface roughness analysis, while thermal damage was quantified from digitized histological images. Among the energy-based techniques, the 2000-nm USP TDF laser demonstrated the lowest surface roughness (Ra 1.22 ± 0.71 μm) and thermal damage (9.85 ± 4.01%). Significant differences were observed among groups for both cutting accuracy and thermal damage ($p < 0.001$). The scalpel demonstrated the lowest overall surface roughness, while the 2000-nm USP TDF laser provided the most favorable combination of precision and minimal thermal injury among energy-based techniques. These findings suggest that the 2000-nm USP TDF laser may offer advantages for oral soft tissue surgery and support further investigation under in vivo clinical conditions.

RACHEL DADSON, DDS Candidate



Rachel Dadson is a Doctor of Dental Surgery (DDS) candidate in the class of 2027 at Stony Brook University School of Dental Medicine. She is originally from Phelps, New York, and earned her Bachelor of Science in Biomedical Sciences with a minor in Pharmacology from the University of Buffalo. Rachel has participated in dental research to further her understanding of treatment modalities and their impact on patient care. Following graduation, she plans to pursue a pediatric dental residency. She hopes to continue to be involved in research as she progresses through her career, in order to provide the best clinical outcomes.

Laser-Assisted Frenectomies: A Systematic Literature Review

Abnormal frenum attachments can contribute to gingival, functional, and esthetic concerns, and laser-assisted frenectomy has increasingly gained popularity due to its efficiency, healing, and patient comfort. This systematic review evaluated laser systems and wavelengths used for lingual, maxillary labial, and mandibular labial frenectomies, with a focus on patient comfort and healing outcomes. A literature search of PubMed, ScienceDirect, and Web of Science from 2000–2026 identified 23 relevant clinical, comparative, observational, and review articles reporting laser wavelength, power settings, frenum location, and patient outcomes. Reported lasers included 1,064-nm Nd:YAG, 445–980-nm diode, 2,780- or 2,940-nm Er,Cr:YSGG and Er:YAG, and approximately 10,600-nm CO_2 systems. Nineteen of 23 studies used local anesthesia. Overall, laser-assisted frenectomy demonstrated favorable clinical outcomes, particularly regarding patient comfort and healing. Diode, Nd:YAG, erbium, and CO_2 lasers were all effective; however, variations and incomplete reporting of laser parameters limit direct comparison. Standardized protocols and more consistent reporting are needed to optimize clinical outcomes and facilitate meaningful comparison among laser systems.



ERIN DOFFONEY, RDH

With over 25 years of experience as a dental hygienist, Erin is a compassionate, patient-centered clinical provider and educator known for building trust and creating comfort in challenging situations. Her approach combines technical expertise with empathy, patience, and genuine care, empowering both patients and colleagues. Drawing on years of professional experience and personal resilience, she brings a calm, adaptable presence to every interaction. She is dedicated to uplifting others and advancing patient care through education, integrity, and meaningful connection.

Scarlet Secrets: Red, Relentless, and Rare Uncovering Plasma Cell Gingivitis

Rationale & Significance Plasma Cell Gingivitis (PCG) is a rare, benign gingival condition that closely mimics plaque-induced gingivitis, desquamative gingivitis, and lichen planus, making it a frequent diagnostic pitfall when tissue fails to respond to conventional therapy. Clinicians who initiate treatment without histopathologic confirmation risk delayed resolution and inappropriate management, underscoring the need for a structured, evidence-based diagnostic approach in atypical gingival presentations. Diagnosis & Etiology A 62-year-old African American male presented with persistent gingival swelling, spontaneous bleeding, and diffuse erythema following an extended lapse in dental care. Examination revealed bright red, edematous, generalized gingival enlargement with bleeding on probing. Work-up included periodontal charting, medical and allergy history, oral microbial DNA testing, and incisional biopsy. Histopathology confirmed a dense plasma cell infiltrate consistent with PCG, with chronic hypersensitivity identified as the likely etiologic driver. Treatment & Outcomes Treatment followed a staged, evidence-based sequence: allergen elimination, hygiene optimization, targeted systemic antibiotics, laser-assisted periodontal therapy, and photobiomodulation, followed by periodontal maintenance. Follow-up demonstrated marked resolution of erythema and gingival enlargement, with improved tissue health, reduced bleeding, and increased patient comfort. Discussion This case illustrates how PCG's clinical overlap with more common gingival pathologies can lead to misdiagnosis and premature adjunctive therapy if biopsy confirmation is bypassed. It reinforces the importance of sequencing diagnostic confirmation before initiating laser-assisted or photobiomodulation therapy, ensuring that treatment is etiology-driven rather than symptom-driven. Conclusion Biopsy-confirmed diagnosis is essential to accurately identify and manage Plasma Cell Gingivitis. When diagnosis precedes treatment, integrating allergen control, antimicrobial therapy, and laser-assisted periodontal care can achieve full resolution of PCG and support long-term periodontal stability.



EDUARD POCOLA, DDS

Dr. Eduard Pocoa DDS, MD, is the Program Director of the University of Florida Advanced Education in General Dentistry (AEGD) Seminole Residency Program and a Clinical Assistant Professor. A graduate of the University of Florida AEGD program, he is dedicated to educating the next generation of dentists while providing comprehensive patient care. Dr. Pocola earned both his DDS and MD degrees from the University of Oradea, Romania, and completed a residency in Medical Examiner Forensics before pursuing advanced dental training in the United States. His clinical expertise includes implant dentistry, oral surgery, IV sedation, digital dentistry, laser dentistry, Invisalign, facial esthetics, and the management of medically complex patients. Passionate about continuing education, he is committed to advancing clinical excellence, mentoring residents, and expanding access to innovative dental technologies and evidence-based treatment through education and hands-on training.

Evidence for Structured Laser Dentistry Training Outcome for AEGD Residents

Developing laser dentistry skills during AEGD and GPR programs may provide residents with valuable clinical training early in their professional careers. This study evaluated whether a structured laser dentistry training program could improve knowledge and competency among AEGD residents. Two cohorts of 12 residents (N=24) completed an 8-hour program combining didactic instruction with hands-on laser training in simulated scenarios. Knowledge and competency were assessed using a 15-item multiple-choice knowledge test and a 15-item standardized competency instrument. Self-rated competency increased significantly in both cohorts ($p < 0.001$), while knowledge increased from 81% to 87% but did not reach statistical significance ($p < 0.06$). Knowledge and competency were not significantly correlated, highlighting the importance of assessing both domains independently. These findings demonstrate that a structured 8-hour laser dentistry program can significantly improve residents' perceived clinical competency while supporting knowledge development. Future research should incorporate more challenging knowledge assessments and objective, observation-based measures of clinical competency.

MAYA ALBANO, Dental Student

Maya is a D4 Dental Student at the Stony Brook School of Dental Medicine and will be graduating in May of 2027. She is from New York, NY and earned her Bachelor of Science in Biology from Stony Brook University in 2022. She plans to pursue orthodontic residency after dental school graduation.



Laser Versus Piezoelectric Surgery in Bone: A Literature Review

Er:YAG lasers and piezoelectric devices provide minimally invasive alternatives to conventional bone surgery for procedures such as implant site preparation, third molar surgery, periodontal defect debridement, and regenerative procedures. This narrative review compared the two techniques with respect to thermal effects, surgical time, bone healing, and implant osseointegration. A PubMed search through June 2026 identified 12 direct comparative studies, including human clinical, animal, ex vivo, and in vitro research. Findings regarding bone surface characteristics were mixed, with some studies favoring Er:YAG for more regular margins and others reporting smoother or more precise cuts with piezosurgery. Thermal effects varied by protocol, although an ex vivo ridge-splitting study demonstrated lower temperature increases with Er:YAG compared with piezosurgery. Laser osteotomies generally required longer procedural times, while bone healing was comparable at later time points, with several animal studies suggesting faster early healing following laser osteotomy. Outcomes for pain, swelling, and trismus following third molar surgery were mixed. Limited evidence on implant osseointegration showed no significant difference in bone-to-implant contact between Er:YAG, piezoelectric, and conventional drilling techniques, although Er:YAG demonstrated higher removal torque than conventional drilling at 8 weeks. Overall, both Er:YAG and piezoelectric surgery appear to be effective alternatives to conventional osteotomy, with neither demonstrating consistent superiority across all outcomes. Each technique offers distinct advantages, and further standardized clinical research is needed to better define their optimal applications.

VIPUL KUMAR SRIVASTAVA, BDS, MDS



Professor Dr. Vipul Srivastava is a Micro Endodontist expert widely renowned for his Minimum Invasive Dental treatments incorporating Lasers and Aesthetic Dentistry. He lectures worldwide and is also invited on various National and International platforms to share his knowledge on Endodontics, Lasers and Aesthetic Dentistry. A graduate from C.O.D.S Manipal, he acquired his M.D.S. in Endodontics and Operative Dentistry from J.S.S Mysore and further went for his Masters in Laser Dentistry from Vienna Austria. He is amongst very few who have completed his Standard Proficiency Course and the only Indian to acquire his Advance Proficiency in Laser Dentistry by Academy of Laser Dentistry, USA.

Multimodal Diode Laser Management of Oral Submucous Fibrosis- A Pre-Malignant Condition: Three Case Reports Using 450 nm & 980 nm Diode Lasers

Oral Submucous Fibrosis (OSMF) is a chronic, progressive potentially malignant disorder characterized by submucosal fibrosis, burning sensation, and restricted mouth opening. This case series evaluated laser-assisted fibrotomy using 450-nm and 980-nm diode lasers followed by 650-nm photobiomodulation (PBM) in three patients with Stage III OSMF. One patient underwent fibrotomy using a 450-nm blue diode laser (1 W, continuous wave), while two were treated with a 980-nm diode laser (2 W, continuous wave). All patients received standardized 650-nm PBM along with physiotherapy, nutritional supplementation, and habit cessation counseling. Mean maximum interincisal mouth opening increased from 7 mm preoperatively to 35 mm chairside and remained at 32 mm after 3 months, while mean burning sensation decreased from VAS 9.0 to 1. Both laser wavelengths provided excellent hemostasis, operative visibility, and minimal thermal damage, with bloodless surgery and no need for sutures. Adjunctive PBM promoted rapid epithelialization and reduced postoperative pain and inflammation. No complications or recurrences were observed during follow-up. These findings suggest that 450-nm and 980-nm diode lasers, combined with PBM and supportive therapy, may provide a safe and minimally invasive approach to OSMF management, improving mouth opening, healing, and patient comfort.



CHI-SHIUN TSAI, DDS, PhD

Dr. Chi-Shiun Tsai is a Special Researcher and Medical Assistant in Clinical Cariology at the Health Sciences University of Hokkaido. He earned his D.D.S. and M.D.S. in Oral Surgery from Shanghai Jiao Tong University, followed by a second D.D.S. and Ph.D. in Cariology from HSUH in 2025. His research focuses on photobiomodulation (PBM) for dentin and dental pulp regeneration, exploring LED and Er:YAG laser applications to support cellular regeneration and improve pulp therapy outcomes. Dr. Tsai is also Specialty Doctor and Director of the Asia Pacific Laser Institute and holds credentials from the European Medical Laser Association, Japanese Society for Laser Dentistry, and Academy of Laser Dentistry.

Effect of Red & Near-Infrared LED Irradiation on the Proliferation & Differentiation of Rat Odontoblast-Like Cells in Vitro

This study evaluated the effects of red and near-infrared light-emitting diode (LED) photobiomodulation (PBM), alone and in combination, on odontoblast-like cells. Rat MDPC-23 cells were irradiated using 630, 660, 850, and 940 nm LEDs for 1–3 minutes under single or daily irradiation protocols, with a second experiment evaluating 660 nm, 850 nm, and combined 660 + 850 nm irradiation. Cell proliferation, differentiation, and mineralization were assessed using CCK-8, alkaline phosphatase, and Alizarin Red S assays. Red and near-infrared irradiation enhanced cell proliferation, while longer irradiation times generally promoted differentiation and mineralization. Combined 660 + 850 nm irradiation also significantly enhanced mineralization and promoted differentiation under most conditions. These findings demonstrate that red, near-infrared, and combined LED-based PBM can stimulate odontoblast-like cell activity and may represent a promising minimally invasive approach for promoting reparative responses in deep carious lesions. Further research is needed to establish optimal irradiation parameters and evaluate clinical applicability.



YUJIN OHSUGI, DDS, PhD

Yujin Ohsugi received a D.D.S. degree from Showa University, Tokyo, Japan in 2014 and a Ph.D. degree from Tokyo Medical and Dental University (TMDU), Tokyo, Japan, in 2019. He received 2019 Dr.Eugene Seidner Student Scholarship and 2020 Dr. Eugene Seidner Research Grant Awards in ALD. He was postdoctoral fellow in Joslin Diabetes Center, Harvard Medical School from 2024 to 2026. He is currently assistant professor, department of Oral biology in Institute of Science Tokyo (former TMDU). His research interests include biological effects of laser irradiation. He published several articles based on research conducted using the Er:YAG laser.

Therapeutic Effects & Molecular Mechanisms of Near-Infrared Phototherapy in a Mouse Model of Medication-Related Osteonecrosis of the Jaw

Medication-related osteonecrosis of the jaw (MRONJ) is a serious complication associated with antiresorptive and anticancer therapies, particularly following invasive dental procedures such as tooth extraction. This study evaluated the preventive effects and potential mechanisms of near-infrared phototherapy (NIR-PT) in a mouse model of MRONJ. Female mice were treated with cyclophosphamide and zoledronic acid before and after maxillary molar extraction, with the experimental group receiving NIR-PT following extraction. Histological, bone structural, RNA sequencing, and bacterial analyses were performed, along with in vitro evaluation of human endothelial and osteoblast cells. Compared with untreated MRONJ mice, NIR-PT significantly improved extraction socket closure at 2 and 5 weeks and increased calcification volume at 5 weeks. Gene expression analysis demonstrated increased EPCR and wound-healing-related signaling, along with suppression of GREM1, an inhibitor of bone formation. NIR-PT also enhanced endothelial cell proliferation, migration, and neovascularization, while promoting osteoblast proliferation and mineralization. No significant differences in bacterial profiles were observed between groups. These findings suggest that NIR-PT may enhance soft- and hard-tissue healing and potentially reduce MRONJ risk by activating host reparative responses, supporting further investigation of NIR-PT as a preventive strategy in high-risk patients.

MOHAMMED NOUROUZIAN, DDS, MSc

Dr. Nourouzian is a board certified orthodontist and oral & maxillofacial surgery resident with clinical and academic focus on craniofacial deformities, orthognathic surgery, and photobiomodulation research. He is experienced in multidisciplinary treatment planning, academic teaching, and clinical research with multiple peer-reviewed publications.



Photobiomodulation Therapy for Accelerating Soft Tissue Anesthesia Reversal & Preventing Self-Inflicted Injuries in Pediatric Dentistry: A Systematic Review

Prolonged soft tissue anesthesia (STA) following dental treatment can increase the risk of soft tissue injury (STI) in children. This systematic review evaluated the effectiveness of photobiomodulation therapy (PBMT) in reducing anesthesia duration and STI incidence after dental procedures. Following PRISMA guidelines, five eligible studies involving children aged 4–10 years were included. Diode lasers with wavelengths of 635, 660, 808, and 810 nm were used at varying energy densities and treatment protocols. All studies demonstrated a significant reduction in the duration of STA ($p < 0.05$), while evidence regarding a reduction in STI incidence remained inconclusive. PBMT may provide a painless and well-accepted approach for shortening soft tissue anesthesia in pediatric dentistry; however, further research is needed to determine whether it effectively prevents soft tissue injuries.

ISABELLA FALCO



Isabella Falco is a senior in high school with an interest in research and pre-law. Through a mentor-led project, she investigated laser-assisted surgical procedures in dentistry and their associated complications. Her work included an interdisciplinary literature review across medical databases, legal research, and web-based evidence, reflecting her interest in how science and law intersect in real-world situations.

Reported Legal Matters Due to Laser Complications in Dentistry

Deep knowledge of laser-tissue interactions is essential for dental providers to avoid complications from laser irradiation in clinical practice. This study reviewed reported laser-related injuries and complications in legal archives using LexisNexis and the FDA MAUDE Database from 1990–2026. Five cases involving injuries and serious complications were identified. Case 1 involved a malpractice lawsuit associated with extensive dental and cosmetic treatment performed in conjunction with lasers. Case 2 involved laser-assisted gingival recontouring that violated the biologic width, resulting in inflammation, gingival recession, bone loss, and long-term oral health problems; the plaintiff was awarded more than $640,000. Case 3 involved complications following LANAP with an Nd:YAG laser, with the patient alleging loss of all teeth in the treated area and requiring extensive reconstruction. The defendant disputed negligence and challenged the need for expert testimony and the timing of the claim. Case 4 highlighted the importance of informed consent when lasers are incorporated into soft tissue procedures, emphasizing the need to explain risks, benefits, and alternatives. Case 5 involved a serious adverse event following LANAP, including postoperative infection requiring intervention; the final outcome remains unknown. Overall, these cases emphasize that dentists using lasers require comprehensive training and must apply laser technology safely and appropriately. Because specialized procedures such as LANAP involve technical issues beyond the knowledge of an average juror, expert testimony is often essential in dental laser malpractice cases. The findings reinforce the importance of proper training, informed consent, adherence to appropriate protocols, and careful management of laser-related complications.



HYGIENE CORNER

The Hygiene Track is Lighting Up Las Vegas!

Education, Inspiration, and a Look at What's Next for Dental Hygiene



The excitement is building as the Academy of Laser Dentistry prepares to bring its **33rd Annual Conference, The Power of Lights, to Las Vegas, October 15–17, 2026.**

After the incredible energy and engagement, we experienced during last year's Hygiene Track in Washington D.C., I am especially excited about what awaits us in Las Vegas. Once again, dental hygienists will have a dedicated place to learn, connect, ask questions, and explore where lasers and light-based technologies can take our profession.

A Day Designed for the Dental Hygienist

Saturday's Dental Hygienist Track takes us from the foundations of laser dentistry to emerging applications and the future of our profession. **Dr. Alfred Wyatt** will begin the day exploring laser wavelengths and the science behind the technology, followed by **Erin Doffoney, RDH**, discussing how to defer and refer with confidence.

I'm excited to present "Lighting the Way: Photobiomodulation for Healing, Pain, and Health in Hygiene," exploring how PBM may support healing, pain management, and patient care. **Jodi Deming, RDH**, will round out our morning before we turn our attention to some of the important changes occurring within our profession.

The afternoon continues with **Angie Wallace, RDH**, addressing the evolving rules and regulations surrounding laser use in dental hygiene, followed by **Laurie Bricker, RDH, MS**, sharing the journey from clinician to educator and the role of laser dentistry in higher education. **Dr. Laura Braswell** concludes the day with a look at lasers in the diagnosis and management of autoimmune diseases.

From wavelengths and PBM to regulation, education, and expanding clinical applications, the day offers something for hygienists at every stage of their laser journey.

One of my favorite things about an ALD conference has always been what happens between the lectures.

It's the conversations with hygienists who share the same questions and challenges. It's learning from clinicians, educators, researchers, and colleagues who are passionate about advancing our profession. And it's reconnecting with old friends while welcoming those attending ALD for the very first time.

Whether you have been using lasers for years, recently completed your first laser course, teach future dental hygienists, or are simply curious about what laser and light-based technologies could bring to your patient care, there is a place for you at ALD.

Our role is no longer simply to learn which button to push or which setting to select. It is to understand the science behind the technology, recognize its appropriate applications and limitations, stay informed about our scope of practice, and determine how these tools can help us provide better care for our patients.

So, pack your curiosity and perhaps a little extra Vegas sparkle and join us!

Come learn. Come connect. Come be inspired. And most importantly, come be part of the conversation about what's next for lasers, light, and dental hygiene.

I can't wait to see you in Las Vegas!

Lynn Atkinson, RDH
ALD Board of Directors
Auxiliary Committee Chair



WELCOME NEW ALD MEMBERS

Yousef Abdullah
Noor Abdulraheem
Stephanie Acuna
Heidi Agens
Khaled Albusairi
Soha Alkoka
Lesley Allen
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Zahree Alzaid
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Ritika Bahri
Araceli Ballesteros
Baylee Barrera
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Amanda Day
Trevor Deere
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Tieler Dempsey
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Nathaniel Fleck
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Tina Gawlikowski
Kathy Gibson
Angie Giron
Amanda Godfrey
Adriana Leon Goitia
Maria Golindano Espanol
Diana Gonzalez
Mireya Gonzalez
Maiti Grabow
Tina Graham Mask
Rhonda Green
Hannah Greer
Julie Hall
Deb Hamilton
Nidia Harding
Holly Harmon
Alexandria Harris
Dawn Harvey
Laurel Henderson
Sharla Henderson
John Hendricks
Jenny Henson
Mario Hernandez
Pamila Holley
Destinee Hood
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Adaugo Ibe
Olivia Isphording
Trinity Jackson
Alina Jafferbhoy
Prathi Jain

Levan Jangirashvili
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Monique Johnson
Ruth Johnston
Jovanicka Jolivert
Morgan Jones
Nichole Jones
Nicole Jones
Negar Kainian
Adhishek Kapoor
Madhuri Katta
Lindsey Kavelman
Jake Keener
Melissa Kennedy
Alexa Kilmore
Sumin Kim
Renee Kimball
Kelly King
Julianna Kissel
Alyssa Klugman
Mili Koirala
Valeria Kresvic
Sornakumar Krishnamoorthi
Jessica Krohn
Jordan Kushner
Quyen Lam
Nicole Lauritsen
Susan Lautner
Autumn Layman
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Sean Lee
Laura Lenzi
Lisa Liggin
Erin Loggins
Jenna Lotz
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Melissa Madison
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Nicole Martin
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Hannah McCance
Kelly McCarthy
Mary McCreary
Heather McDowell
Fiona McMichen
Faith McSpadden
Marisol Mendoza
Amy Meraz
Lisa Miraglia
Chinmaya Mishra
Geraily Moghadam
Thanh Mollica
Kathy Monroy

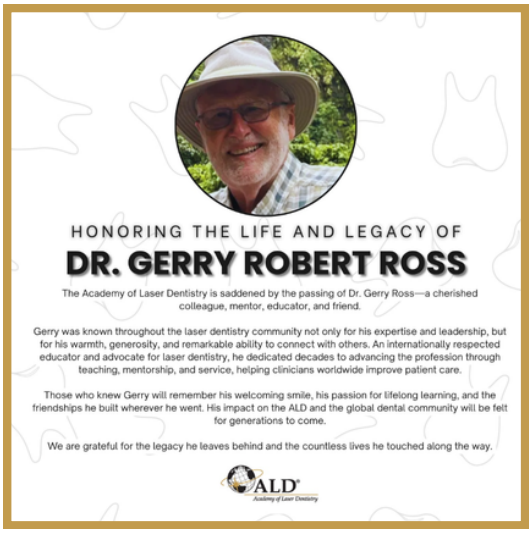
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Social Media Highlights



August 21, 2026

Today, we honor the life and legacy of Dr. Gerry Ross.

A valued member of the ALD community, Gerry's passion for education, mentorship, and the advancement of laser dentistry left a lasting impact on colleagues around the world. He will be remembered for his generosity, warmth, and unwavering commitment to helping others.

We extend our deepest condolences to his family, friends, and all who had the privilege of knowing him.

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