

LIGHTWAVES

The Official Newsletter of the ALD

May 2026

INSPIRING THE NEXT GENERATION

A Conversation with Dr. John Graeber

WHERE SCIENCE MEETS SKILL

A Friendly Talk with Dr. Ed Kusek

LEADING BY EXAMPLE

An Interview with Dr. Laura Braswell

HYGIENE CORNER

Lynn Atkinson

RECAP OF PBM CLINICAL MODULE



ALD

Academy of Laser Dentistry

Lightwaves: The Official Newsletter of the ALD

Editor

Dr. Ali Obeidi

Art Direction & Graphic Design

Morgan Heisey

Business Office

15436 N Florida Avenue
Suite 102

Tampa, FL 33613

(813) 444-1011

www.laserdentistry.org

Contributors

Dr. John Graeber

Dr. Edward Kusek

Dr. Laura Braswell

Lynn Atkinson

The Academy of Laser Dentistry

Officers

Grace Sun
PRESIDENT

Shigeyuki Nagai
VICE PRESIDENT

Arun Darbar
TREASURER

Marina Polonsky
SECRETARY

Walid Altayeb
PAST PRESIDENT

Directors at Large

Lynn Atkinson

Timothy D. Larson

Maria Judith Yap

Ali Obeidi

Natalia Elson

Robin Horton

Jyuhn Ke

Scott Parker

Georgios Romanos

Director of Operations

Stephen Goldman

Executive Director

Todd Goldman

15438 N Florida Ave
Suite 102

Tampa, FL 33613

(813) 444-1014 (P)

(813) 422-7966 (F)

www.laserdentistry.org

tgoldman@amgoldman.com

Lightwaves: The Official Newsletter of the ALD is published quarterly by the Academy of Laser Dentistry, 15436 N Florida Ave, Suite 102, Tampa, FL 33613, (813) 444-1011. Subscription is included with membership in the Academy of Laser Dentistry.

© 2026 Academy of Laser Dentistry

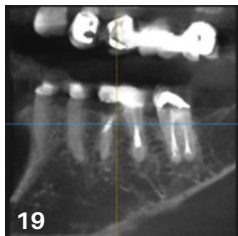
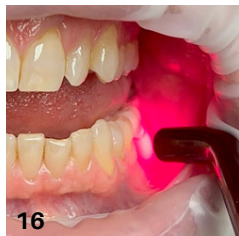
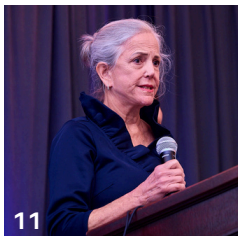


LIGHTWAVES

The Official Newsletter of the ALD

April 2026

In This Issue



2 Editor's Letter

Dr. Ali Obeidi

4 President's Remarks

Dr. Grace Sun

5 Inspiring the Next Generation:

Celebrating a Lifetime Commitment to Education and Global Impact: A Conversation with Dr. John Graeber

Dr. Ali Obeidi

8 Where Science Meets Skill:

Celebrating Excellence in Clinical Laser Dentistry: A Friendly Talk with Dr. Edward Kusek

Dr. Ali Obeidi

11 Leading By Example:

Honoring Dedication, Leadership, and Service to the Academy: An Interview with Dr. Laura Braswell

Dr. Ali Obeidi

15 Hygiene Corner

Photobiomodulation in Dental Hygiene: Elevating Care Through Light-Based Therapy

Lynn Atkinson

19 Sticky Bone and High Intensity Laser Therapy

A Perfect Marriage

Dr. Edward Kusek

25 Recap—ALD Standard Level Course & PBM Clinical Module

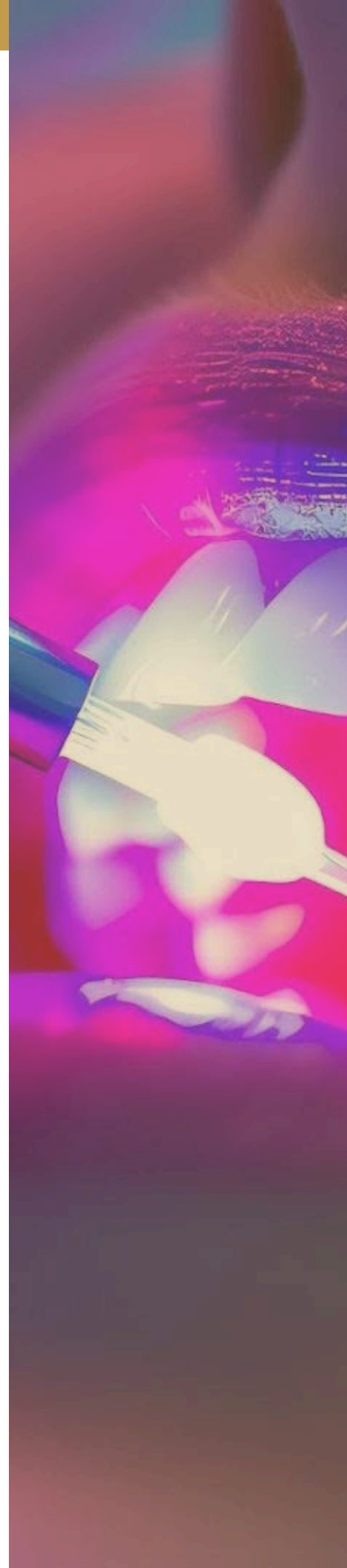
26 2026 Annual Conference

Registration is Now Open!

29 Welcome ALD's New Members

30 Join the Conversation

Social Media Highlights



EDITOR'S LETTER



As we continue to advance the Academy of Laser Dentistry's mission of education, collaboration, and clinical excellence, this issue of *Lightwave* reflects the energy, growth, and global momentum of our community.

We begin with a message from our President, Dr. Grace Sun, highlighting the continued success of the Standard Level Course and the strong reception of the newly introduced Photobiomodulation (PBM) Advanced Module. The recent Tampa program demonstrated the value of integrating foundational education with focused clinical training, an approach that is shaping a more structured and accessible pathway for clinicians pursuing Fellowship and Mastership.

Education and mentorship remain central to our identity. This issue features conversations with the recipients of the Academy of Laser Dentistry's 2026 awards, individuals who represent the very best of our profession. Like many dedicated ALD members, they have committed themselves not only to patient care, but also to advancing the field through research, innovation, teaching, mentorship, and service. Their contributions reflect countless hours of effort, often behind the scenes and without expectation of recognition, yet their impact continues to shape the future of laser dentistry.

Complementing these interviews are clinical and research contributions that explore implant therapy, periodontal regeneration, PBM applications, and advanced laser-assisted protocols, highlighting how light-based technologies continue to expand what is possible in everyday practice. Dr. Ed Kusek presents a comprehensive implant case demonstrating the integration of sticky bone and High-Intensity Laser Therapy (HILT) to enhance bone regeneration and healing. His step-by-step approach illustrates how combining biologic principles with advanced laser protocols can lead to predictable outcomes, even in complex cases. Lynn Atkinson, RDH, provides a practical and forward-looking perspective in the Hygiene corner of this issue on the role of photobiomodulation in daily hygiene practice. Her article highlights how PBM can be seamlessly incorporated into routine care to reduce inflammation, improve healing, and elevate the standard of patient-centered periodontal therapy.

We are also encouraged by the Academy's expanding national and international presence. Ongoing outreach efforts, including those led by the Goldman group under the direction of Mr. Todd Goldman, continue to strengthen global engagement and visibility for ALD. At the same time, we are pleased to welcome our newest members, whose enthusiasm and commitment represent the future of our organization.

Lightwave is a reflection of its members. We invite you to contribute to future issues by submitting articles, clinical cases, and research insights. We also encourage submissions for our Classified Section and welcome high-quality images for consideration as future cover features.

Looking ahead, we are excited for the upcoming joint meeting in Las Vegas on October 15–17, where the Academy of Laser Dentistry will collaborate with WALT and NAALT in a truly unique international event. While the deadline for oral presentations has passed, we strongly encourage submission of posters to be part of this exceptional scientific program. Your participation is what makes our community strong and forward-thinking.

Finally, we extend our sincere appreciation to our editorial and creative team. We are especially pleased to recognize Morgan Heisey, whose work as Art Director and Graphic Designer has elevated *Lightwave* to a new level of professionalism and visual excellence.

Thank you for your continued dedication to advancing laser dentistry.

Ali Obeidi, DDS, MSc, MS, FLAD

Editor, *Lightwave*

PRESIDENT'S REMARKS

Dear Colleagues,

It is with great enthusiasm and optimism that I share several exciting updates as we continue to advance the mission of the Academy of Laser Dentistry.

Our Standard Level Course (SLC) educational programs have been exceptionally well received across recent regional meetings. The strong engagement and positive feedback from participants reaffirm the importance of accessible, high-quality foundational laser education. It is encouraging to see clinicians eager to deepen their knowledge and integrate laser dentistry into everyday practice.

In March, we also launched our Advanced Module in Photobiomodulation (PBM) during the Tampa course—marking an important step forward in expanding our educational offerings. This program was met with tremendous interest and enthusiasm, reflecting the growing recognition of PBM as a critical component of modern, evidence-based patient care.

Building on this momentum, we are actively working to expand and promote additional advanced education opportunities in the coming months. Our goal is to provide a structured pathway for clinicians at all levels to continue their professional development and achieve mastery in laser dentistry and photonic therapies.

At the same time, preparations are well underway for our upcoming joint meeting in Las Vegas, bringing together leaders and colleagues from across the laser and photobiomodulation communities. We have received an impressive number of abstract submissions, and our team is diligently working to develop a comprehensive and inspiring scientific program. This meeting promises to be a landmark event, highlighting innovation, collaboration, and the future direction of our field.

I encourage each of you to be part of this exciting gathering—your participation is what makes our community strong, dynamic, and forward-thinking.

Thank you for your continued dedication, support, and commitment to excellence in laser dentistry.

Warm Regards,

Grace Sun, DDS, FAACD, MALD, MAGD, MICOI

President, Academy of Laser Dentistry



INSPIRING THE NEXT GENERATION

Celebrating a Lifetime Commitment to Education and Global Impact



A Conversation with Dr. John Graeber by Dr. Obeidi, Editor

Dr. Graeber maintained a full-time comprehensive cosmetic practice in East Hanover, New Jersey, for 48 Years. He has utilized Nd: YAG, diode, Erbium: YAG, and Erbium, Cr: YSGG dental lasers since 1991. An alumnus of the University of Medicine and Dentistry of New Jersey (1972), Dr. Graeber is a past president of the Tri-County Dental Society and the Metropolitan Academy of Laser Dentistry. He has served as a member of the American Dental Association Council on Ethics, Bylaws, and Judicial Affairs, and is a member of the Board of Directors of the Academy of Laser Dentistry. He has lectured internationally in many dental schools, esthetic continuums, and major dental meetings for more than 23 years on both lasers and air abrasion. He has trained thousands of new owners for most of the major dental laser manufacturers. An Academy of Laser Dentistry Standard Course Provider, he has served as Certified Laser Educator at the Las Vegas Institute and has written 11 nationally published articles on high-tech subjects. Dr. John Graeber is a Past President of the Academy of Laser Dentistry. He has recently published a textbook, Microdentistry: Prevention, Diagnosis and Treatment.

Q: Let's start at the beginning, how did you get into teaching in the first place?

It actually started pretty early. In dental school, I had a work-study job creating self-learning modules for the Restorative Department. That got me hooked on teaching. Then, during my time in the U.S. Army in the early '70s, I was asked to train hygienists and assistants. It just kept building from there.

Later on, in 1991, I was part of a small group that started the Metropolitan Laser Study Club, which eventually became a precursor to ALD. There were just four of us, meeting every month, trying to figure out these new Nd:YAG lasers together. We quickly realized that if we don't teach each other, no one else will.

“It was obvious early on, laser dentistry is best taught by clinicians, not by sales reps.”

Q: Sounds like you had some great people around you early on. Who influenced you the most?

I was lucky to work with some incredible people, Drs. Eugene Seidner, Art Levy, and Les Burman. They were not just colleagues, but true leaders in the field.

And of course, Dr. Glenda Payas. She was an educator before she even became a dentist, and you could see that in everything she did. A lot of

her practical approaches to teaching rubbed off on me. Funny enough, we share the same birthday along with Larry Kotlow, so I like to think something special came with that!

Q: What did it feel like receiving an award named after her?

Honestly, it meant a lot. Being recognized with the Dr. Glenda Payas Educator Award is one of the highlights of my career. It's not just about teaching, it's about making a lasting impact, and that's something I've always strived for.

“This award represents more than teaching it's about making a difference that lasts.”

Q: You've taught all kinds of audiences over the years. Has that changed how you approach teaching?

Absolutely. One thing I've learned is that every audience is different. You can't just walk in with the same lecture and expect it to work everywhere.

You have to understand what people need, where they're coming from, and then build your message around that. Teaching is not about what you want to say, it's about what they need to hear.

Q: Was there a moment where you really felt like “this is what I’m meant to do”?

Yes, very clearly. In 1996, Dr. Terry Myers asked me to present the clinical portion of one of his programs in New York City. That was a big moment for me. It gave me confidence and really confirmed that I belonged in this space.

Q: Laser dentistry can feel intimidating for a lot of dentists. How do you simplify it?

I’ve always believed in using analogies. For example, I compare photon energy to a cue ball hitting another ball on a pool table. It helps people visualize what’s happening.

I also focus on practical things, like how lasers affect bacteria. If you explain that in simple terms, people get it quickly. And honestly, videos help a lot. Seeing tissue interaction under a microscope? That’s powerful.

“If you can see it, you can understand it. Visual learning changes everything.”

Q: Where do you think dental education is falling short today?

We’re slow to change. Dentistry tends to be conservative, and many schools are still teaching what they learned decades ago.

Modern technologies, especially lasers, aren’t getting the attention they deserve. I’ve personally only had a couple of hours with senior dental students to introduce lasers. That’s just not enough.

Q: You’ve helped expand education globally. What have you seen internationally?

There’s a huge appetite for learning outside North America. During my time as ALD President,

working with Arun Darbar, we really focused on global outreach, and it paid off.

Our international chapters are growing, and many of our leaders now come from diverse backgrounds. That’s a strength. The future of laser dentistry is global.

“There’s a real hunger around the world to learn and grow and the Academy is helping lead that movement.”

Q: What role does technology play in all of this?

It should play a huge role but we’re not quite there yet in many institutions. That said, when used properly, technologies like imaging and videography can completely transform how we teach and learn.

Q: For someone who wants to become an educator in this field, where should they start?

Start by committing to continuous learning. Don’t just focus on one area, study all aspects of light energy. Then, build your credentials, Fellowship, Mastership, Educator status.

And just as important, learn how to communicate. Teaching a room full of professionals is a completely different skill than talking to a patient.

Q: What excites you most about where things are heading?

Light therapy. No question. I really believe it’s going to be one of the biggest frontiers, not just in dentistry, but in medicine as a whole. We’re just scratching the surface.

“Light therapy is the next great frontier; we’re only beginning to understand its potential.”

Q: Last question, if you could leave one message for the ALD community, what would it be?

For me, everything comes back to the patient. I had some difficult dental experiences as a kid, and that stayed with me. It’s what pushed me to make dentistry better.

Lasers have played a huge role in that mission.

And I’ll leave you with this:

For leaders, ask people what they need, and help them get there.

For clinicians, use lasers in a way that makes your patients feel like they’re in the best hands possible.

“At the end of the day, it’s all about the patient, and making their experience better.”



BOARD OF DIRECTORS NOMINEES



The Academy of Laser Dentistry is now accepting nominations for its 2026-2027 Board of Directors. Members are encouraged to recommend individuals who demonstrate strong leadership and a commitment to advancing the Academy’s mission.

Nominations Due: June 30, 2026

**Elections: Annual Conference
October 15, 2026
Las Vegas, Nevada**



Your participation is vital—please take a moment to submit your recommendations at

laserdentistry.org/board-nominations

Closing Note

Dr. Graeber’s story is a powerful reminder that great educators don’t just teach, they inspire, mentor, and shape the future of the profession. His passion for learning, innovation, and patient care continues to influence generations of laser dentists around the world.

WHERE SCIENCE MEETS SKILL

Celebrating Excellence in Clinical Laser Dentistry



A Friendly Talk with Dr. Edward Kusek by the Editor

Dr. Ed Kusek, based in Sioux Falls, South Dakota, is a nationally recognized leader in implant and laser dentistry with decades of clinical and educational experience. A Diplomate of the American Board of Oral Implantology and Fellow of the American Academy of Implant Dentistry, he has served as past president of both the Academy of Laser Dentistry and the American Academy of Implant Dentistry. He holds Masterships in the Academy of Laser Dentistry and the Academy of General Dentistry and received the AGD Lifelong Learning and Service Recognition in 2012. A 1984 graduate of the University of Nebraska College of Dentistry, Dr. Kusek is an adjunct professor at Lincoln Memorial University, the University of Nebraska Medical Center College of Dentistry, and the University of South Dakota Dental Hygiene School, and has authored numerous publications in implant and laser dentistry. In recognition of his outstanding clinical contributions, he is the recipient of the Leon Goldman Award for Clinical Excellence 2026. Below is a friendly conversation with Dr. Kusek, where he shares his journey, clinical insights, and perspective on the future of laser dentistry.

Q: Let's start simple how did lasers first enter your world?

Believe it or not, it started with a simple lunch-and-learn from a laser manufacturer. Nothing fancy. But sometimes that's all it takes just one exposure to something new.

Q: Was that one of those "this is interesting" moments or more like a real turning point?

Oh, it was definitely an aha moment. Right then and there, I realized this wasn't just another piece of equipment it was something that could completely change how I practice dentistry.

"Sometimes all it takes is one moment to completely change how you see your profession."

Q: You've now been recognized with the Leon Goldman Award what does that mean to you personally?

It really means a lot. More than anything, it's about being recognized by your peers the people who understand the work, the effort, and the commitment behind it. I'm truly grateful. It's a reflection of a lifelong dedication to improving what we do as clinicians.

Q: From a clinical standpoint, what's the biggest difference lasers have made in your practice?

Better healing. Less pain. And honestly it allows me to push the envelope.

I can take on procedures today that I wouldn't have considered before, and I can do them more predictably. That's the real value consistency and better outcomes for patients.

"Lasers don't just improve outcomes they expand what's possible."

Q: You mentioned pushing the envelope, can you share a case that really stands out?

There are so many, but a couple really come to mind.

One was using photobiomodulation (PBM) to help regenerate the inferior alveolar nerve after it was partially severed during oral surgery. That's something we traditionally had very limited options for.

Another is using high-intensity laser therapy (HILT) to help regenerate the condyle. Cases like these really show what lasers can do beyond what we once thought impossible.

Q: Has this changed how you approach treatment planning overall?

Absolutely. It's opened doors. I think differently now.

Compared to more traditional implant approaches, I can push boundaries further with more confidence because I understand what lasers can do biologically.

Q: What are some common mistakes you see dentists make when they first start using lasers?

The biggest one? They give up too soon.

They don't give themselves enough time to really learn it, understand it, and integrate it into their workflow. Like anything else, it takes commitment.

“The biggest mistake isn't using lasers wrong it's giving up before you truly learn them.”

Q: So what separates a good laser clinician from a great one?

Education and the willingness to keep pushing yourself.

The great ones don't stop learning. They keep asking questions, refining techniques, and looking for ways to improve.

Q: How do you personally stay sharp after all these years?

I stay curious. I'm always asking: *Why does this work? Why doesn't that work?*

That mindset keeps you growing. You can't just rely on what you already know you have to keep building on it.

Q: For someone who wants to take their laser skills to the next level, what would you tell them?

Challenge yourself. Don't stay comfortable.

Look for new techniques, new applications, new ways to improve your outcomes. That's where growth happens.

Q: What excites you most about the future of clinical laser dentistry?

More acceptance. More clinicians are starting to understand the value of lasers and that's huge.

As adoption grows, so does innovation. And that benefits everyone especially our patients.

“The more clinicians embrace lasers, the more the entire profession moves forward.”

Q: Last question if you could leave one message for the ALD community, what would it be?

Never stop questioning how you can make things better for your patients.

That's really what it comes down to. Keep learning, keep improving education is the key to everything we do.

“Keep asking how you can do better because your patients deserve it.”



Closing Note

Dr. Kusek's journey is a powerful reminder that clinical excellence isn't just about mastering techniques it's about curiosity, persistence, and the drive to continually improve patient care. His work reflects what's possible when science and skill truly come together.

SHARE YOUR VOICE IN *LIGHTWAVES*

Do you have a story, clinical insight, or perspective worth sharing? The *Lightwave* Editorial Board invites ALD members to contribute **articles, ideas, and original photography** for upcoming issues.

Whether it's a clinical pearl, educational experience, or a unique viewpoint in laser dentistry, we want to hear from you. Articles should be **reader-friendly, engaging, and easy to follow** (up to **500 words**), avoiding overly technical or purely scientific language. Exceptional photography may also be selected for **feature placement or the newsletter cover**.



Submit your work to laserexec@laserdentistry.org and be part of the conversation shaping laser dentistry.

LEADING BY EXAMPLE

Honoring Dedication, Leadership, and Service to the Academy



An Interview with Dr. Laura Braswell by the Editor

Dr. Laura Braswell is a respected periodontist based in Atlanta, Georgia, with over 30 years of experience incorporating laser technology into clinical practice. She is a Diplomate of the American Academy of Periodontology and a Fellow of the American College of Dentists, the International College of Dentists, and the Pierre Fauchard Academy. A charter member and Master Clinician of the Academy of Laser Dentistry, she is also an Honorary Fellow of the American Veterinary Dental Society and serves as the staff dentist for Zoo Atlanta and the Georgia Aquarium. In recognition of her exceptional dedication and service to the profession, she was honored with the John G. Sulewski Distinguished Service Award in 2026. Below is a friendly conversation with Dr. Braswell, where she shares her journey, passion for the Academy, and perspective on leadership, education, and the future of laser dentistry.

Q: Dr. Braswell, take us back how did your journey with the Academy of Laser Dentistry begin?

It goes back over 30 years. I attended one of the early meetings in Florida, and I remember thinking right away this is something special. The energy in the room, the passion people had for laser dentistry it was contagious. I knew I had found my professional home.

“From the very first meeting, I knew I had found a group of people who truly believed in what they were doing.”

Q: What made you go from being a member to stepping into leadership and service roles?

Honestly, a little encouragement goes a long way. Our former staff members, Gail and Donna, really pushed me to get more involved. Other members did too.

At some point, I realized I had gained a lot of experience over the years and it didn't feel right to keep that to myself. Sharing that knowledge, especially with younger members and students, just felt like the natural next step.

Q: You've now received the John G. Sulewski Distinguished Service Award—what did that mean to you?

I was absolutely thrilled. Truly honored.

John Sulewski is someone we all look up to. He's been there since the very beginning helping shape laser dentistry, training clinicians, answering questions honestly, if anyone has a question, we still say, “Call John!”

To receive an award that carries his name that's incredibly meaningful.

“When you receive an award named after someone you admire, it means even more.”

Q: You've been deeply involved with ALD over the years what parts have meant the most to you?

Teaching, without a doubt.

Being part of the Speaker's Bureau has allowed me to travel, connect with people, and share what I've learned. But what really stands out is working with residents and hygienists. They're eager, they're curious, and when they leave a course feeling confident and empowered that's the best feeling.

Q: Was there a moment where you really felt this is why I do what I do?

Yes, and it happens more often than you'd think.

In my community, oral surgeons send me implant cases that are struggling what we'd call "ailing implants." Through collaboration, especially with colleagues at Emory, we've been able to make a real difference whether it's improving outcomes or helping cancer patients feel more comfortable using photobiomodulation.

Every time we help a patient like that, you feel it. That's impact.

“Every time we help a patient feel better, that’s when you know you’re making a difference.”

Q: What makes the ALD community so unique in your eyes?

It's the people. There's a genuine passion for lasers and for helping each other grow.

What I love most is that there's no hierarchy. It doesn't matter if you're a student, a seasoned clinician, a hygienist, or part of the support team everyone is welcomed into the conversation. Everyone learns together.

And honestly, the annual meeting? It's incredible. Some of the best learning happens outside the lecture hall.

Q: How important is member involvement and volunteerism to the Academy?

It's everything.

The Academy thrives because people show up, get involved, and give their time. There are so many opportunities committees, education, networking and a lot of it is accessible to members at little to no cost.

Some of the most valuable learning experiences come from simply being present and engaged.

Q: For someone who wants to get more involved but doesn't know where to start what would you tell them?

Just speak up.

Let the leadership know you're interested. Reach out. There are always opportunities you just have to take that first step.

Q: What about younger members or new faces how can they make an impact?

We need them. That's the future of the Academy.

There's so much talent and energy coming in, and we want to keep that momentum going. The hands-on courses are a great place to start you can't learn this from a book or YouTube. You have to experience it.

“You can't truly learn laser dentistry from a screen you have to get your hands involved.”

Q: Looking ahead, what would you love to see for the future of ALD?

Growth and continuity.

We've spent decades building awareness around lasers in dentistry, and now it's finally gaining traction. I'd love to see the Academy continue to grow, while also creating space for experienced members to pass on what they've learned to the next generation.

That's how we keep moving forward.

Q: Last question if you could leave one message for the ALD community, what would it be?

Get involved and keep learning.

There's nothing more rewarding than knowing you're doing everything you can to provide the very best care for your patients. That's what this is all about.

“The more you learn, the better you serve and that’s what truly matters.”



Closing Note

Dr. Braswell's story is a testament to the power of community, mentorship, and giving back. Her journey reminds us that leadership isn't just about titles wellit's about showing up, sharing knowledge, and lifting others along the way.



AWARDS NOMINATIONS



The Academy of Laser Dentistry is now accepting nominations for its prestigious ALD Awards, recognizing individuals who have demonstrated exceptional leadership, innovation, and dedication to advancing laser dentistry and patient care. Members are encouraged to take part in honoring colleagues whose contributions have made a meaningful impact on the profession. Your participation plays an important role in celebrating excellence and inspiring continued growth within our community.

Nominations Due: June 30, 2026

**Awards Presented: Annual Conference
October 16, 2026
Las Vegas, Nevada**



Please submit your nominations at
laserdentistry.org/award-nominations



2026

THE POWER OF LIGHTS In Las Vegas

ALD
33rd
YEAR
1993-2026

At the 33rd Academy of Laser Dentistry's
Annual Conference, Certification & Exhibition

*Includes the World-Renowned SLC
Laser Training and Certification Program*

October 15-17, 2026
Las Vegas, NV



**Join us October 15-17, 2026 in Las Vegas for
the 33rd ALD Annual Conference & Exhibition!**

Experience cutting-edge laser education, world-renowned certification, hands-on training, and global networking to elevate your clinical expertise, enhance patient care, and advance your practice to the forefront of modern dental technology.

Registration is NOW OPEN!

Register at www.laserdentistry.org/ald-2026



HYGIENE CORNER

Photobiomodulation in Dental Hygiene: Elevating Care Through Light-Based Therapy



LYNN ATKINSON, RDH

A SHIFT TOWARD BIOLOGIC DENTISTRY

Dental hygiene is evolving beyond mechanical debridement into a biologically driven model of care. As our understanding of inflammation, healing, and the oral-systemic connection continues to expand, so must the tools we use to support optimal outcomes. Photobiomodulation (PBM) represents one of the most impactful yet underutilized adjuncts in dental hygiene. By harnessing specific wavelengths of light

to stimulate cellular activity, PBM offers clinicians a non-invasive method to enhance healing, reduce inflammation, and improve patient comfort without thermal damage.

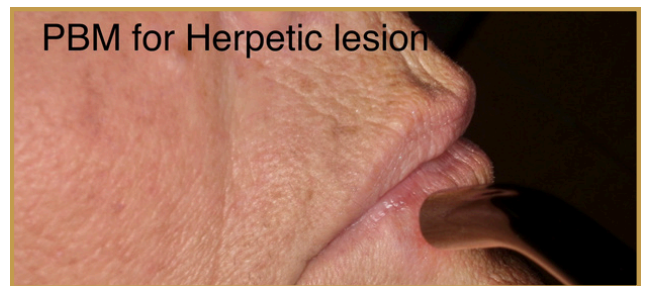
WHAT IS PHOTOBIO-MODULATION?

According to the American Society for Laser Medicine and Surgery, Photobiomodulation (PBM) “is a form of light therapy that utilizes non- ionizing forms of light sources including lasers, LEDs, and broadband light, in the visible and infrared spectrum. It is a non-thermal process involving endogenous chromophores eliciting photophysical and photochemical events at various biological scales.”

PBM, formerly referred to as low-level laser therapy (LLLT), uses low energy light to interact with chromophores in the mitochondria. This interaction leads to increased production of adenosine triphosphate (ATP), modulation of reactive oxygen species, and the release of signaling molecules that promote healing. The foundational work of Endre Mester first demonstrated that low laser energy could stimulate tissue repair rather than destroy tissue, establishing the basis for modern PBM therapy.

WHY PBM BELONGS IN THE HYGIENE OPERATORY

As dental hygienists, we are uniquely positioned to incorporate PBM into routine care. Our role in managing chronic inflammatory conditions,



particularly periodontal disease, aligns directly with the biologic effects of PBM.

Key benefits include:

- Reduction of inflammation: PBM modulates pro-inflammatory mediators, supporting resolution of gingival inflammation following instrumentation.
- Enhanced tissue healing: Increased ATP production accelerates cellular repair and tissue regeneration.
- Pain management: PBM provides analgesic effects, improving patient comfort during and after procedures.
- Improved microcirculation: Vasodilation enhances oxygenation and nutrient delivery to tissues.
- Support of lymphatic flow: Particularly valuable post-Non-Surgical Periodontal Therapy/Scaling and Root Planing (SRP) to reduce edema and promote healing.



INTEGRATION INTO THE HYGIENE WORKFLOW

Successful integration of PBM does not require a complete overhaul of your clinical protocol, it requires intention. PBM fits seamlessly after biofilm disruption and instrumentation, when tissues are most receptive to healing. Think of PBM not as an additional procedure, but as a biologic amplifier of the care you are already providing.

Clinical applications in hygiene include:

- Post-scaling and root planing (SRP)
- Periodontal maintenance
- Implant maintenance
- Management of aphthous ulcers and herpetic lesions
- Temporomandibular discomfort
- Desensitization protocols
- Post-operative healing support

PBM VS. OTHER LASER APPLICATIONS

It is critical to distinguish PBM from other laser uses in dentistry:

- Laser Bacterial Reduction (LBR): Targets bacterial load (adjunctive)
- Laser Assisted Periodontal Therapy (LAPT): Focused on diseased tissue management
- Photobiomodulation (PBM): Focused on host response and healing

PBM is not about removing tissue or directly eliminating pathogens, it is about supporting the body's ability to heal.

CLINICAL CONSIDERATIONS

To achieve predictable outcomes with PBM, clinicians must understand dosing and technique:

- Fluence (J/cm^2) is critical. Too low may have no effect; too high may inhibit healing
- Non-contact application is typically used
- Consistent protocols improve reproducibility
- Understanding laser-tissue interaction is essential

PBM is technique-sensitive, but when applied correctly, it delivers consistent and meaningful results.

THE FUTURE OF HYGIENE IS LIGHT-GUIDED

As dental hygiene continues to evolve, the integration of technologies that support biologic healing will become the standard, not the exception.

PBM aligns with the modern hygiene model:

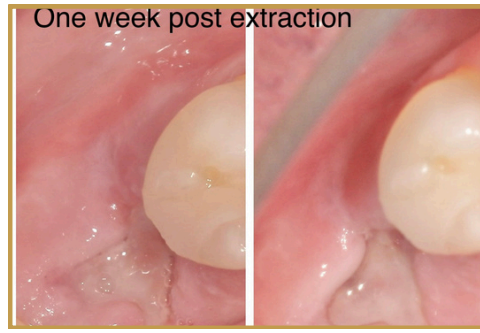
- Minimally invasive
- Patient-centered
- Evidence-informed
- Outcome-driven

By incorporating PBM into everyday care, hygienists elevate their role from instrumentation-focused providers to therapeutic clinicians influencing systemic health outcomes.

CONCLUSION

Photobiomodulation is not just an emerging trend, it is a clinically relevant, evidence-supported modality that enhances what we already do best. When combined with comprehensive diagnostics, effective biofilm management, and patient-centered communication, PBM allows us to deliver care that is not only effective, but transformative. When we stop thinking only about what we remove and start focusing on how we help tissue heal, everything about Periodontal care changes.





REFERENCES

1. American Society for Laser Medicine and Surgery. (n.d.). What is photobiomodulation (PBM)? <https://www.aslms.org/for-the-public/what-is-photobiomodulation>
2. Convissar, R. A. (2023). Principles and practice of laser dentistry (3rd ed.). Elsevier.
3. Hamblin, M. R. (2016). Mechanisms and applications of the anti-inflammatory effects of photobiomodulation. *AIMS Biophysics*, 3(3), 337–361. <https://doi.org/10.3934/biophy.2016.3.337>
4. Mester, E., Szende, B., & Tota, J. G. (1967). Effect of laser on hair growth of mice. *Kísérletes Orvostudomány*, 19, 628–631.
5. Sgolastra, F., Petrucci, A., Severino, M., Gatto, R., & Monaco, A. (2013). Effectiveness of diode laser as adjunctive therapy to scaling and root planing in chronic periodontitis: A meta-analysis. *Photomedicine and Laser Surgery*, 31(6), 265–271. <https://doi.org/10.1089/pho.2012.3397>



DON'T FORGET TO RENEW YOUR MEMBERSHIP!

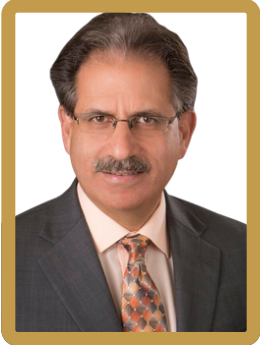


Through ALD, members have access to:

- World-Class Clinical Education
- Complimentary CE Opportunities
- ADA CERP CE Opportunities
- Seidner Student Scholarship & Research Grant programs
- Laser Help Network
- Do-It-Yourself Laser-Safety Guide
- Laser Buying Guide
- Patient Education Brochures
- Fellowship & Mastership Opportunities

Renew Today at www.laserdentistry.org/join-ald

STICKY BONE AND HIGH INTENSITY LASER THERAPY: A PERFECT MARRIAGE



EDWARD KUSEK, DDS

INTRODUCTION

This case involved an 81-year-old male who lost tooth #19 due to root fracture. The patient presented a thick biotype: hard and soft tissues were within normal limits, crepitation of both temporomandibular joints, but no pain from the muscles of mastication. Maximum opening was 45mm. A CBCT was taken (Figure 1) to determine if there was adequate bone interseptally to spread bone to get an implant in place, with enough length, height and depth. On evaluation, it was found that there was adequate height to place implant if the tooth was extracted without destroying the interseptal bone with the use of osseodensification drills and use of sticky bone and followed up of High Intensity Laser Therapy (HILT).

The CBCT was sent to a Maxillofacial Radiologist to evaluate the radiograph to determine if there was any pathology that this author did not diagnose. Saliva testing was done with Oral Path to determine if high bacteria levels could create an issue with periodontal disease in the future and or create a systemic issue. The patient was also placed of Vitamin D supplements, as studies show this deficiency can cause implant failure (living in South Dakota, especially in the winter there is less sun). The patient was placed on a Probiotic to increase good bacteria, all prior to surgery.

The Maxillofacial Radiologist report showed no pathology.

TREATMENT PLAN

1. Surgical extraction of #19, by removing the crown, then sectioning the tooth buccal to lingual, then elevating the mesial, then the distal root. Cured out the granulation tissue present and then flush the site with Aqueous Ozone that has shown to decrease bacteria¹. Use CO₂ laser for elevation of the soft tissue with surgical elevators. Platelet-rich fibrin (PRF) will be

used to create sticky bone with decorticated bone. PRF membranes will cover the flap before suturing. Implant placement with Osseodensification drills to split the interseptal bone.

2. High-intensity laser therapy (HILT) with a Deka Nd: YAG 1064nm laser will be performed to stimulate bone growth. The settings will be applied over three visits, with the intensity establish by Alessandro Bizzarri:

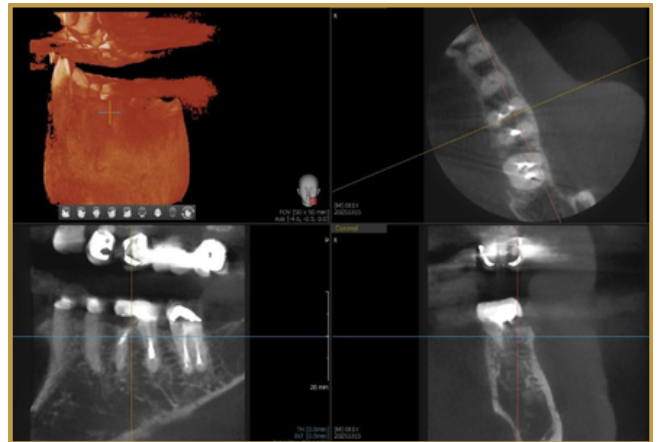


Fig. 1 Pre-Op CBCT



Fig. 2 Erbium decortication

- First treatment: 60mJ, 250us, 30Hz, 2.4W for 20 seconds on the buccal and lingual aspects of the surgical site. Treatment of the above setting to stimulate left and right submandibular and left and right subclavicular lymph nodes.
- Second treatment: 80mJ, 250us, 30Hz, 2.4W for 20 seconds on the buccal and lingual aspects of the surgical site.
- Third treatment: 100mJ, 250us, 30hz, 2.4W for 20 seconds on the buccal and lingual aspects of the surgical site.

3. Remove 3.0 PTFE sutures in 10-14 days, depending on healing.

4. Healing period: Wait three months

5. Uncover implant using a 10,600nm CO2 laser. Place scan body and take a radiograph to confirm proper seating case for laboratory screw retained abutment and crown fabrication. Perform aa full arch-arch scan for fabrication of screw retained and a facebow transfer and bite registration.

6. Perform post-operative bite and tissue evaluation.

7. Schedule routine maintenance and follow up.



Fig. 3 Aqueous ozone

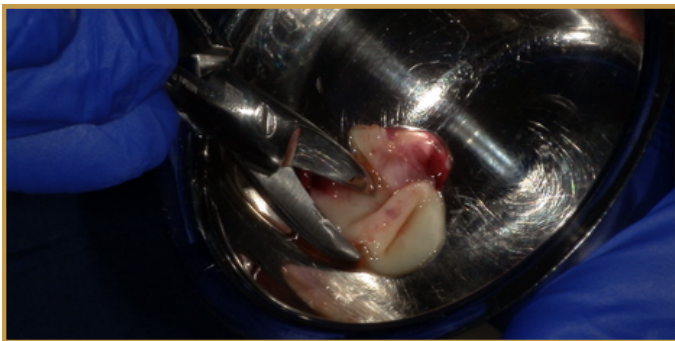


Fig. 4 Cutting PRF membrane



Fig. 5 Decortical bone mixed with PRF

TREATMENT CONSIDERATIONS

1. Salivary diagnostic testing to determine if the patient presents with elevated levels of red complex bacteria, which can contribute to periodontal disease and systemic health issues.

2. Oral probiotics and vitamin supplementation to increase beneficial bacteria, reduce pathogenic red complex organisms, and raise vitamin D levels, thereby helping to prevent implant failure²

3. High-intensity laser therapy to decrease inflammation, promote bone formation and accelerate healing³.

4. Use of an erbium laser (Biolase) to perform decortication and induce the regional acceleratory phenomenon, which can enhance bone-to-implant contact⁴.

5. Use of a CO₂ laser (Deka) for flap reflection during implant placement and uncovering prior to scan body placement.

6. Preparation of sticky bone using a horizontal centrifuge with PRF and demineralized bone to improve graft stability and integration⁵.

CASE REPORT: IMPLANT PLACEMENT

Intravenous access was established in the patient's right antecubital fossa, and blood was drawn to obtain samples for centrifugation to create PRF. The PRF is combined with demineralized bone and the buffy coat layer of the

PRF, served to promote bone regeneration in the mandibular posterior segment.

The following medications were administered: 20mcg dexmedetomidine, 4mg of midazolam, 25mg fentanyl, 8mg dexamethasone sodium phosphate and 1G of cephalosporin at the completion of sedation.

A full-thickness flap was reflected from the distal aspect of 21 to mesial of #18 using a 10600nm CO2 laser (0.5mm spot size, no water) for approximately 20 seconds, followed using elevators to reflect tissue.

Pilot drill used in the middle of the interseptal bone, then used drill size of 2.0, 2.5, 3.0, 3.3, 3.5, 4.0, 4.3 and 4.5 with oseodensification drills in reverse mode. Used Erbium laser 2.5W 20Hz with 20/30 water/air to accelerate bone healing (figure 2), used 30cc of Aqueous Ozone (figure 3) to detoxify osteotomy site, seated 5.0 x 10mm Ditron implant (Figure 11), placed Sticky bone (Figures 4-9) into the voids of the extraction/osteotomy site. Placed PRF membranes (Figure 10) over the site and closed with 3.0 PTFE sutures.

Used erbium laser 5W 20Hz 0/20 to tissue weld and to increase tissue healing. Followed by Nd:YAG laser stimulation of the lymph nodes in the head and neck region and the surgical site, using settings of 30Hz, 250us and 60mj for 20 seconds on each of the sites (Figures 12 and 13).

UNCOVERING IMPLANT AND SCANNING CASE

After three months of healing, the patient was scheduled for implant exposure. Topical anesthetic was applied, followed by administration of 0.5cc of 20mg of Lidocaine with 10mcg of epinephrine and 2.0cc of 40mg of Septocaine with 5mccg of epinephrine.

A 10,600nm CO2 laser was used to make a vertical incision palatal to the implant to reposition the attached tissue buccally, followed by a horizontal incision to preserve attached tissue on the adjacent teeth, creating an "H"-shaped flap design. On reflection of the flap, this author could not visually see the cover screw of the implant after aggressive scraping of type III bone. Surgical handpiece to remove bone was needed to expose the cover screw, then scraped bone out! Estimated that bone grew over the cover screw by 3mm!

A TruAbutment scan body was placed, and radiograph was taken to confirm proper seating of the scan body on the implant base. A full-arch scan of both the maxilla and mandible, including the bite registration was completed using a Trios 4 scanner.



Fig. 6 Using buffy coat PRF with bone and PRF membrane

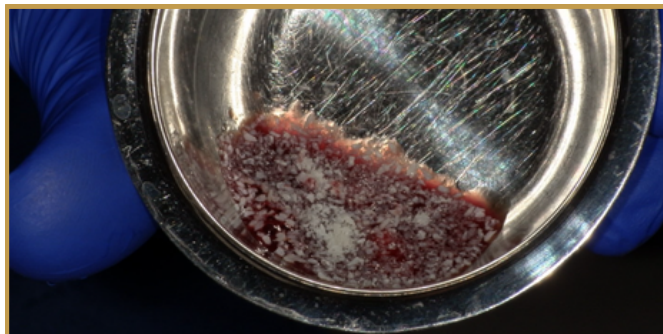


Fig. 7 Sticky bone



Fig. 8 Sticky bone cut into small pieces to place

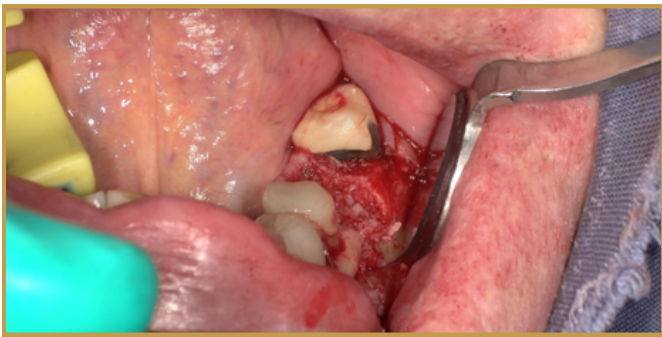


Fig. 9 Sticky bone plate



Fig. 10 PRF membrane placed

The case was then emailed to the laboratory (Caladent) for fabrication of screw retained crown with buccal margins of metal 2.5mm from the base of the implant. A healing abutment was placed after irrigating the site with 10cc of aqueous ozone.

After three weeks, the definitive abutment/crown was soaked in aqueous ozone and seated with 30N of force, repeated twice. Contacts were verified and occlusion was adjusted and polished. The access was sealed with First Plug, sealed with flowable composite and photograph was taken.

A follow-up was conducted two weeks later to confirm occlusion and ensure healthy peri-implant tissue.

CONCLUSION

The case demonstrates the comprehensive steps taken to achieve an optimal outcome, including the use of salivary diagnostic testing, probiotics, supplemental

vitamins, aqueous ozone and high-intensity laser therapy.

It is crucial to evaluate the desired clinical outcome first and then work backward to determine the necessary steps to achieve it. Successful implantology requires a solid understanding of head and neck anatomy, oral surgery, prosthodontics and periodontics, along with the ability to recognize and manage systemic factors that may compromise treatment. This case shows the integration of laser technology contributed to predictable healing and long-term success.

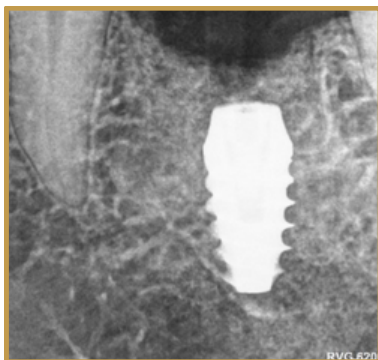


Fig. 11 Implant placement



Fig. 12 HILT treating the head and neck lymph nodes



Fig. 13 HILT at the surgical site

REFERENCES

1. Britton HC. Draper M. Talmadge JE. Antimicrobial efficacy of aqueous ozone in combination with short fatty acid buffers. *Infect Prev Pract.* 2019 Dec;16;2(1):100032.
2. Kuhad A. The role of Vitamin D levels in early dental implant failure. *J Long term Med Implants.* 2023;33(4):1-8.
3. Pineda S. Polack A. Stevenson S. Goldberg V. Caplan A. A semiquantitative scale for histologic grading of articular cartilage repair. *Acta Anat (Base).* 1992;143:335-340.
4. Vema C. Regional acceleratory phenomenon. *Front Oral Biol.* 2016;18:28-35.
5. Miron R. Zuccheli G. Pikos MA et al. Use of platelet-rich fibrin in regenerative dentistry: A systematic review. *Clin Oral Investig.* 2017;21:1913-1927.



CLASSIFIEDS—OPPORTUNITIES AWAIT



Looking to buy or sell equipment, explore practice opportunities, or connect with your next professional move? The *Lightwave Classifieds* section is your go-to resource.

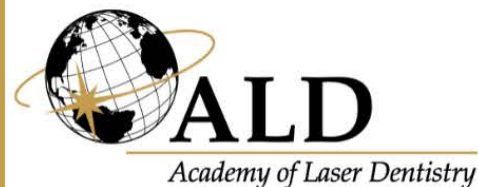
Listing for members is **FREE** and they are encouraged to submit listings for:

- **Laser and dental equipment for sale**
- **Practices available or seeking transition**
- **Career and job opportunities**



Submit your work to laserexec@laserdentistry.org and reach a targeted audience of laser dentistry professionals and make meaningful connections within the ALD community.

Standard Level Laser Training & Certification



Peer-reviewed, hands-on training & comprehensive laser certificate course for the entire dental team!

Dental Laser Training & Certification

- Comprehensive Hands-On Training
- Multi-Disciplinary Applications
- Cutting-Edge Technology
- Enhanced Treatment Outcomes
- Competitive Advantage

Dental Hygiene Laser Training & Certification

- Hands-On Training
- Recognized Certification
- Enhanced Patient Care
- Career Growth
- Expand Your Skillset

Total 14 hrs. CE

www.LaserDentistry.org

3-Part Certification Process

Part 1: Foundations in Laser Dentistry - Self-paced Online Digital Learning Program

Part 2: Hands-On Clinical Simulation (In-Person)

Part 3: ALD Dental Laser Standard Level Online Exam

2026 COURSE LOCATIONS & DATES

Boston, MA • May 9

Chicago, IL • May 30

Cleveland, OH • July 11

New Brunswick, NJ • Aug 8

San Jose, CA • Aug 8

New Orleans, LA • Aug 22

Memphis, TN • Oct 3

Honolulu, HI • Nov 6-7

Indianapolis, IN • Nov 14

Portland, OR • Nov 14

San Diego, CA • Nov 21

Arlington, VA • Dec 5

RECAP—ALD STANDARD LEVEL COURSE & PBM CLINICAL MODULE

Tampa, FL | March 6-7, 2026

The Academy of Laser Dentistry successfully hosted a combined Standard Level Course (SLC) and Photobiomodulation (PBM) Clinical Module on March 6–7, 2026, at its Administrative Office in Tampa.

This program marked the first time the Academy integrated the Standard Level Course with a PBM clinical module into a two-day educational format. The course was led by Dr. Grace Sun and Dr. Arun Dalbar, delivering a comprehensive and clinically focused experience for participants.



The program was very well received, with attendees demonstrating high levels of engagement throughout both days. Participants consistently noted that the content was not only informative but also immediately applicable to their daily clinical practice. Many expressed strong interest in continuing their education through future Academy programs.



Based on this positive outcome, the combined format is considered a successful pilot initiative. Moving forward, the Academy anticipates offering similar two-day programs, with one day dedicated to the Standard Level Course and the second focused on selected components of the clinical module curriculum. As the full clinical module is designed as a multi-day educational pathway, this structure allows participants to progressively accumulate training days toward Fellowship and Mastership in a practical and efficient manner.



This evolving educational model reflects the Academy's commitment to providing accessible, structured learning opportunities while supporting clinicians in integrating photobiomodulation and laser technologies into their practices.

Photographs from the course, including group images and session highlights, are included to capture key moments from this successful program.

The Academy extends its appreciation to all faculty, organizers, and participants who contributed to the success of this initiative and looks forward to building on this momentum with future integrated educational offerings.

2026 ANNUAL CONFERENCE & EXHIBITION: THE POWER OF LIGHTS

Las Vegas, NV | October 15-17, 2026

ALD SPEAKERS

KEYNOTE SPEAKERS



Dr. Homa H. Zadeh



Dr. Akira Aoki



Dr. Jan Tunér

GENERAL SESSION SPEAKERS



Dr. Robin Horton



**Dr. Kinga Grzech-
Leśniak**



Nick Clausen



Dr. Ali Obeidi



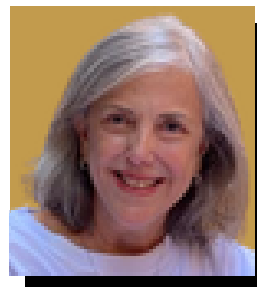
Dr. Peter Vitruk



**Dr. Janina Golob
Deeb**



**Dr. Saleh Anvaria
Aria**



Dr. Laura Braswell



Erin Doffoney

WALT/NAALT SPEAKERS

KEYNOTE SPEAKERS



Dr. Juanita Anders



Dr. Praveen Arany

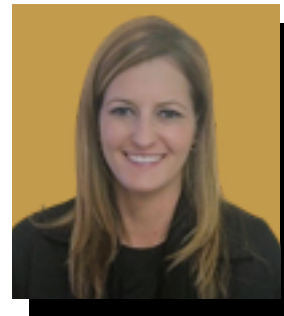
PLENARY SESSION SPEAKERS



**Dr. René-Jean
Bensadoun**

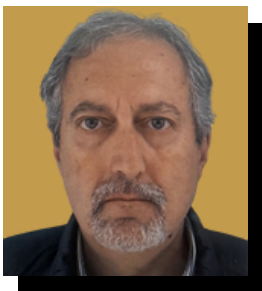


Dr. Liisa Laakso



Nicolette Houreld

PRE-CONFERENCE PROGRAM EDUCATIONAL COURSES SPEAKERS



**Dr. René-Jean
Bensadoun**



Dr. Praveen Arany



Dr. Juanita Anders



Dr. Reem Hanna



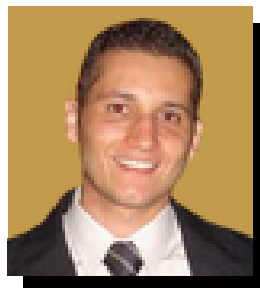
Dr. Lilach Gavish



Dr. Liisa Laakso



**Dr. Nivaldo
Parizotto**



**Dr. Cleber
Ferraresi**



Dr. Paolo Cassano

ORAL PRESENTATION SPEAKERS



**Dr. Mohamed
Yehya**



**Dr. Janina Golob
Deeb**



Kody Newman



Dr. Scott Sigman



Ruth Phypers



**Dr. Belinda
Mandrell**



Dr. Lilach Gavish



Kate Perkins



Thais Azevedo Reis



**Iasmym Mendes
de Jesus**



REGISTRATION IS NOW OPEN!



Explore Courses, Speakers, Workshops, and more!

Register Today at
www.laserdentistry.org/ald-2026

WELCOME NEW ALD MEMBERS

Jilann Abbott
Fatima Abdelhadi
Samuel Aguilar
Zaliya Akbasheva
Sarah Akers
Sara Alhabli
Soha Alkoka
Jacob Allen
Leah Abigail Anana
Tricia Angluin
Raina Askar
Tam Au
Jasmeet Aujla
Ritika Bahri
Sarah Bakar
Adam Barrack
Luke Bauserman
Beth Beberwyk
Lynsie Beilman
Megan Bengier
Carmen Benitez
Farah Bennett
William Berry
Alexandra Bilunas
Sladjana Bjelac
Erwin Briones
Gabriela Brito
Gian Calandrelli
Abigail Campbell
Annabel Cerna
Edward Chappelle Jr.
Ying Chen
Jianye Chen
Angela Chen
Denise Clement

Garrett Crawford
Cecil Cray
Nakiya Dalleva
Amanda de la Vega
Katelyn DeGuzman
Nora Delgado
Elizabeth Desamero
Baljit Dhillon
Svati Dogra
Adriana Dominguez
Aliya Dorner
Robert Eades
Nathan Estrin
Gianna Gagliardi
Elizabeth Garcia Hernandez
Genevieve Garris
Christie Ger
Jacey Halliburton
Laurel Henderson
Carrie Hernandez
Ramin Hessamfar
Tim Heward
McKenzie Hidalgo
Helen Hong
Zach Houser
Wei Huang
Lisa Huish
Mirna Juarez
McKenzie Kahler
Sundeep Kaur
Kamalpreet Kaur
Daniel Keiper
Neeraj Khanna
Ngoc Khuu
JeeHui Heather Kim

Kristin Kohler
Mili Koirala
Juliana Kuleva
Sandeep Kumar
Alan Kwong Hing
Annette Ledezma
Cynthia Leung
William Longabach
Skylar Lordemann
Esperanza Luquin Moreno
Melissa Madison
Christina Mannion
Maira Martinez Garcia
Joshua Matatov
Nisha Mody
Ethan Moore
Karen Morgan
Anas Najjar
Ahmad Najjar
Donalyn Nakamoto
Binh Ngo
Karima Nguyen
Vy Nguyen
Huong Nguyen
Alaina Olmos
Kai Ming Ouyang
Payal Patel
Dalila Perez-Deniz
Ellie Peterson-Burkle
Hugh Phillis
Mourad Rahim
Virginia Ramirez
Gabriela Rendon
Gail Rohlfing
Alejandro J. Salcedo

Jessica Santana
Maria Saunders
Justin Schlaikjer
Morgan Schreck
Alyssa Schwartz
Khalid Shafey
Kylie Sims
Thomas Skoumal
Emily Smith
Erika Sotelo
Halie Spencer
Sierra Stilson
Heather Stockton
Ana Suarez
Justin Sue
Krsten Sweet
Andrew Swenson
Mahnaz Tayarani
Angela Thach
Piper Thompson
April Toyer
David Tsadyk
Sharan Ubbur Srinivasa
Jane Ursprung
David Velek
Samantha Villarreal
Lauren Weller
Jacob White
Janae Wilken
Meghan Wilkerson
Lakin Wolfe
Lauren Wright
Siu Wing Yeung
Inna Zagvazdin



ALD

Academy of Laser Dentistry

JOIN THE CONVERSATION

Social Media Highlights

THE POWER OF LIGHTS
In Las Vegas
REGISTER NOW!
October 15 - 17, 2026
Venue: Sahara Hotel

At the **33rd** ALD Annual Conference & Exhibition

Presentations and Workshops in Advanced Dental Laser & Light Therapy
- Led by Three World-Renowned Organizations

WALT **ALD[®]** **NAALT**
World Association for Photobiomodulation Therapy | Academy of Laser Dentistry | North American Association for Light Therapy

813-444-1011 laserdentistry.org

March 11, 2026

Registration is now open! 🌟

Join us in Las Vegas for the 33rd ALD Annual Conference & Exhibition, three days of cutting-edge education, presentations, and workshops in advanced dental laser and light therapy led by three world-renowned organizations: WALT, ALD, and NAALT.

📍 Sahara Hotel — Las Vegas
📅 October 15–17, 2026

Don't miss your chance to learn, connect, and experience the Power of Lights in dentistry! ✨

👉 Register now at laserdentistry.org or call 813-444-1011 to secure your spot!

April 18, 2026

A fantastic evening connecting over dinner - ALD Executive Director and Singapore Chapter Director 🇸🇬

It's incredibly exciting to see how much the Singapore chapter is growing and the energy surrounding laser dentistry in the region.

Grateful for the warm welcome and meaningful conversations, this is just the beginning!



Click here to
Follow us on social media!



@academyoflaserdentistry

