26th Annual
Conference & Exhibition
Program Guide
Dallas, Texas

www.laserdentistry.org
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Welcome to ALD 2019!

As our 25th anniversary milestone year comes to a close, the Academy is poised to embrace the future and all of the twists and turns it may bring. Although our work is challenging and diverse, it has been fueling the future in so many ways.

The ALD has made some serious inroads into becoming a global team of collaborative professionals. We are proud to have affiliated study clubs across the globe dedicated to the same mission: to support the safe and effective use of dental lasers for improving the oral health and well-being of our patients.

We have expanded our online library with the introduction of a webinar series to help our members continue to learn and develop clinical skills throughout the year. We're proud to be leading the way as a trusted advisor at state regulatory board hearings as well as representation at the Congressional level to support photobiomodulation (PBM) as an alternate therapy amidst the opioid crisis.

In response to our members’ comments, we’re pleased to roll out our Standard Level Course – a new and improved certificate program, which aims to standardize the fundamentals through an online module so that face-to-face time can focus directly on mastering clinical skills through hands-on workshops and clinical simulation. Some of you will be experiencing this during our conference. Of course, we welcome feedback so that we may continue to improve and work out any kinks.

This is just a snapshot of our yearlong tireless efforts. Our bimonthly newsletter "Lightwaves" and our presence on social media are an effort to keep our members connected and better informed of all of our activities in between conferences. There is so much more that goes on that, unfortunately, cannot be contained in our annual gatherings.

Volunteering for the ALD has been an exciting journey, and I encourage all of our members to get involved and help push the boundaries of what we can achieve. An active curiosity and asking the tough questions together with active engagement to work toward solutions will not only help the ALD continue to grow stronger but will help each of us grow in our professional careers. And the added bonus is that the bond we share can lead to lifelong friendships!

Welcome to our 26th annual conference! Learn, connect, and be inspired!!

Raminta Mastis, DDS
President of Academy of Laser Dentistry
Welcome to the 26th Annual Academy of Laser Dentistry Conference

Dear Fellow Colleagues, Friends, Supporters,

On behalf of the Academy of Laser Dentistry and the Conference and General and Scientific Session Committees, we are pleased to welcome you to ALD’s 26th Anniversary Annual Conference and Exhibition!

Our conference committee has been working very hard all year to put together a great program that will enhance your laser knowledge, be fun, and give you a chance to build lasting relationships. We are both long-time laser users and conference attendees. One of the things we love best about coming to these meetings is a chance to spend time with old friends and make new ones.

If you are a first-time attendee, please feel free to come up to us and introduce yourself – if we don’t get to you first. We would love to meet you and personally welcome you to the Academy. You are able to hear some of the top laser practitioners speak about laser science and techniques, followed by practicing these techniques in the hands-on workshops. We have created an entire Saturday schedule of hands-on workshops that will allow you to go home to your practices on Monday and implement what you have learned here. If you haven’t already registered for a workshop, please check with the Registration Desk to see if there is availability.

While at the meeting, you will be able to use the Online Program Planner on your computer, notebook, iPad or phone. This will allow you to build your itinerary and download handouts.

Our Corporate Members and Exhibitors bring an added level of knowledge and expertise to our conference. We value their support and encourage you to visit all of our vendors during meals and breaks, which are served in the Exhibit Hall. They would welcome a visit from you and will be happy to give you information on their products and services.

Lastly, you will see both of us during the opening program and throughout the conference. We are here to serve you. So, if we can help make your conference experience even better, please just ask us, or any of the many other long-term Academy members and ALD staff. We think you will be amazed how friendly and helpful the members of this Academy are. We hope that you have an absolutely wonderful time, and will plan to come back to future conferences, become a long-term laser practitioner, and a valued member of the Academy of Laser Dentistry.

Thank you for being here!

Sincerely,

Mel Burchman, DDS
ALD President-Elect & 2019 Conference Chair

Gerald Ross, DDS
2019 General and Scientific Sessions Chair
Welcome to Dallas!

It is our honor to welcome you to Dentistry’s Laser Meeting, our Academy of Laser Dentistry’s 26th Annual Conference and Exhibition. We invite you to join ALD’s commitment to oral health through laser technology.

As dedicated healthcare professionals, we are here to evaluate and enhance the science of light technology and to further our collective knowledge on the benefits and potential enhancements that light and laser energy can bring to the quality of life for patients globally. Our mission as ALD members is to share this knowledge with our colleagues and use it to enhance patient care on a daily basis throughout the profession.

Keeping with our mission to facilitate education and research, we are excited about expanding this year’s conference theme, “The Laser Systemic Connection - Lighting the Way Toward a Healthier Mouth and Body” with programs on laser use in periodontology, hygiene, implants, endodontics, restorative dentistry, and oral surgery applications. Featuring the connection between oral health and overall systemic health, heart attack, stroke and other conditions with keynote presenter Dr. Charles Whitney, ALD fosters dental discussions that promise to improve the care we provide to our patients. We’ve added the importance of oral probiotics with Dr. Martin Handfield and a full track on dental applications that address oral-systemic whole-body health. Friday’s General Session focuses on Photobiomodulation (PBM); the use of light energy to aid in prevention, diagnosis, pain management, and healing of a multitude of oral and systemic conditions that did not seem possible at our first conference over 26 years ago.

Other conference highlights include numerous hands-on workshops, student scholarship and research grants presentations on Friday, a Pediatric Symposium on Tethered Oral Tissues (TOTs) on Saturday, and laser safety training, also on Saturday.

All of us, as members of the ALD, should be proud of our collective efforts for the progress that is being made to include laser technologies into mainstream everyday patient care. So don’t sit back; join in to relax, interact, share, learn, and most importantly enjoy your conference and camaraderie with your peers.

We sincerely welcome you to Dentistry’s Laser Meeting!

Sincerely,

Gail Siminovsky, CAE
Executive Director
Executive Officers
Raminta Mastis, DDS, President, St. Clair Shores, MI
Mel Burchman, DDS, President-Elect, Langhorne, PA
Ed Kusek, DDS, Treasurer, Sioux Falls, SD
Arun Darbar, BDS, Secretary, Leighton Buzzard, United Kingdom
Charles Hoopingarner, DDS, Immediate Past President, Houston, TX
Gail Siminovsky, CAE, Executive Director, Coral Springs, FL

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Ed Kusek, DDS, Vice Chair, 2020 Chair, Sioux Falls, SD
Keith Brewster, DDS, Dallas, TX
Charles Carpenter, DDS, Forty Fort, PA
Arun Darbar, BDS, Leighton Buzzard, UK
Larry Kotlow, DDS, Albany, NY
Gerald Ross, DDS, Toronto, Ontario, Canada
Gail Siminovsky, CAE, Coral Springs, FL
John G. Sulewski, MA, Huntington Woods, MI
Mike Ventriello, Ventriello Communications, Brick, NJ

2019 General and Scientific Sessions Committee
Gerry Ross, DDS, Chair, Toronto, Ontario, Canada
Keith Brewster, DDS, Vice Chair, Chair 2020, Dallas, TX
Heather Angers, RDH, Lakewood, CO
Laura Braswell, DDS, Atlanta, GA
Arun Darbar, BDS, Leighton Buzzard, UK
John Graeber, DMD, East Hanover, NJ
Larry Kotlow, DDS, Albany, NY
Eric Linden, DDS, New York, NY
Jeanette Miranda, RDH, Sioux Falls, SD
Marina Polonsky, DDS, Ottawa, Ontario, Canada
Craig Sanford, DDS, Nantucket, MA
Mary Lynn Smith, RDH, McPherson, KS
John Sulewski, MA, Huntington Woods, MI
Angela Wallace, RDH, Tulsa, OK

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Fern Carbonell, Speaker Coordinator, Austin TX

Executive Director
Gail Siminovsky, CAE

Executive Assistant
Donna Rell
Certification, Conference, Membership

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Craig Sanford, DDS Nantucket, MA
Grace Sun, DDS, Los Angeles, CA

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Keith Brewster, DDS, Dallas, TX
John Sulewski, MA, Huntington Woods, MI

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Nick Hudson, Qwantum Management
John Sulewski, MA

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Fern Carbonell, Speaker Coordinator, Communications
Michael Ventriello, Ventriello Communications
Michael Copeland, Copeland Productions

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Mission of Our ALD 2019 Conference
To provide attendees with a positive educational and recreational experience that will leave them better equipped to provide improved patient care with increased provider satisfaction.

Academy Mission
The Academy of Laser Dentistry is committed to oral health through laser technology.

About the Academy
The Academy of Laser Dentistry (ALD) is an international, professional membership association of dental practitioners and supporting organizations dedicated to improving the health and well-being of patients through the proper use of laser technology. ALD is one of the largest nonprofit international organizations devoted to lasers in dentistry and includes leading clinicians, academicians, and researchers in all laser wavelengths. The Academy is devoted to clinical education, research, and development of standards and guidelines for the safe and effective use of dental laser technology. The Academy actively supports education and research through its program, fosters dialogue, and seeks to build community among its members and dental organizations, educational institutions, researchers, industry representatives, and others who share our mission.

The Academy’s official incorporation took place in 1993, following the merger of the American Academy of Laser Dentistry, the International Academy of Laser Dentistry, and the North American Academy of Laser Dentistry.

General Information

Conference Design and Educational Methods
ALD Dentistry’s Laser Meeting is the Academy of Laser Dentistry’s 26th Annual Conference and Exhibition. It is intended for educational and informational purposes to improve dental education, clinical practice, and dental research in the use of lasers in dentistry. Educational methods include lecture, discussion, demonstration, and supervised hands-on participation activities. The theme of for 2019 is “The Laser Systemic Connection: Lighting the Way Toward a Healthier Mouth and Body.”

Expected Learner Outcomes
Expected learner outcomes include a broad overview of the research and clinical aspects of lasers in dentistry. Presentations encompass applications in virtually all laser wavelengths for general dentistry, periodontics, aesthetic dentistry, restorative dentistry, pediatric dentistry, implantology, endodontics, and oral surgery. Practice management topics are also offered. By means of didactic lectures, panel discussions, and participation courses, all attendees will have exposure to basic science and clinical laser use in many areas of dentistry. In addition, the specialty nature of this conference provides a networking between practitioners, researchers, and academicians leading to new interest and scientific breakthroughs in the fields of dentistry.

Laser Certification Program
The educational objective of the Academy’s Laser Certification Program is to provide candidates with an overview of the scientific fundamentals of lasers, the instruments themselves, safety issues, and clinical guidelines in accordance with the Curriculum Guidelines and Standards for Dental Laser Education.

Intended Audience and Background Requirements
The intended audience includes dentists in all disciplines, hygienists, dental assistants, office staff, industry representatives, government professionals, and anyone interested in learning about lasers in dentistry. The meeting is geared toward both novice and experienced laser practitioners who will share information about the use of lasers in dentistry. Unless specified otherwise for certain sessions, individuals attending the conference are not required to have any previous knowledge or experience in laser dentistry, medicine, or surgery.

Responsibility of Program Selection
The Academy’s General and Scientific Sessions Committee is solely responsible for the review of submitted abstracts, selection of faculty and presenters, and approving the specific content of all continuing education (CE) activities.

Continuing Education Credit
Continuing education credit is available to all eligible participants. The Academy of Laser Dentistry is an ADA CERP Recognized Provider. ADA CERP is a service of the American Dental Association to assist dental professionals in identifying quality providers of continuing dental education. The amount of CE credit to be granted is determined according to the individual educational content of each presentation and course. Up to approximately 23 CEUs are possible:

Up to approximately 23 CEUs are possible:

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<td>Standard Proficiency Lecture and Examinations</td>
<td>6.0</td>
<td>2.0 Participation</td>
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<td>Friday Workshop</td>
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The Academy of Laser Dentistry and ADA CERP do not approve or endorse individual courses or instructors, nor does it imply acceptance of credit hours by boards of dentistry.

Concerns or complaints about a CE program may be directed to the Academy of Laser Dentistry or to ADA CERP at ADA.org/CERP.
Disclosure of Speaker and Faculty Commercial Relationships
According to the Academy’s Conflict of Interest and Disclosure Policy, faculty and speakers for this conference are expected to disclose any economic support, personal interests, or potential bias that may be perceived as creating a conflict related to the material being presented. Disclosure statements are printed in the conference program and are included as a slide at the beginning of each presentation. This policy is intended to alert the audience to any potential bias or conflict so that participants may form their own judgments about the material being presented.

Disclaimer
The views expressed and materials presented represent the personal views of the individual participants and do not necessarily represent the opinion of the Academy of Laser Dentistry. While the General and Scientific Sessions Committee of the ALD is responsible for the selection of faculty and presenters and approving the specific content of all CE activities, the Academy assumes no responsibility for the content of the presentations made by individual participants or groups of participants. Selected presentations may include exploratory research or experimental procedures and are intended for informational purposes that may lead to new interest and scientific breakthroughs in the fields of dentistry.

Copyright
All proceedings of the Conference are intended solely for dissemination of knowledge relative to the art and science of lasers in dentistry. Any statement of presentation made is to be regarded as limited publication only and all property rights in the material presented, including common law copyright, are expressly reserved to the speaker or to the ALD. Any sound reproduction, transcript, or other use of the materials presented in the conference without written permission of the Academy of Laser Dentistry or the individual speaker is prohibited to the full extent of common law copyright in such material. Audio and video taping is strictly prohibited unless prior permission is given by the Academy of Laser Dentistry.

Name Badges (Mandatory)
Registrants are required to wear name badges at all times to all conference events, both educational and social receptions, with the exception of the optional guest activities that are off the property. This badge serves as verification of your paid conference registration.

Tickets
Your badge is your ticket to lectures, social events and Friday’s Big Party. Registrants are required to sign up for workshops. Rosters for each workshop will be available on-site at the registration desk based upon attendee sign-up. On-site workshop space is available as space allows. Badges are required to receive meals during the 3 conference days.

Attire
You will want to be comfortable while your mind is abuzz, so resort casual dress is highly recommended for all educational sessions. Speakers should wear professional business attire while presenting. Dress for the Friday evening Big Party is festive cocktail attire.

Conference Children’s Policy
Children are not allowed in the lecture hall or exhibit hall. Tickets for optional events and activities may be purchased at the registration desk. Childcare, nanny, or companion services may be arranged through Guest Services.

The Academy of Laser Dentistry (ALD) is a not-for-profit organization qualifying under Section 501c(3) of the U.S. Internal Revenue Code. The Academy of Laser Dentistry is an international professional membership association of dental practitioners and supporting organizations dedicated to improving the health and well-being of patients through the proper use of laser technology. The Academy is dedicated to the advancement of knowledge, research, and education and to the exchange of information relative to the art and science of the use of lasers in dentistry. The Academy endorses the Curriculum Guidelines and Standards for Dental Laser Education.

Abstracts, presenter biographies, disclosure information, and product descriptions are published for educational purposes as submitted by the respective presenters and exhibitors. They do not necessarily represent the views of the Academy of Laser Dentistry. ALD is not responsible for the opinions expressed by the presenters, exhibitors and advertisers. The Academy reserves the right to edit all abstracts, course descriptions and summaries, biographies, and other program information. When substantial revisions are made, authors are given the opportunity to accept the changes or to withdraw their submittal.

Written permission must be obtained by the Academy to audiotape, videotape, duplicate, and/or distribute any portion of the conference program or proceedings. Photography of any kind during any session is prohibited without prior consent.

Practitioners are advised to investigate and consider which medical devices and materials are cleared by the U.S. Food and Drug Administration for safety and efficacy and which are considered experimental, and which procedures are considered within the applicable scope of their license, competence, skills, and abilities, as established by their education, training, and experience. Clinicians are advised to review the specific indications for use of their devices and to review their operator manuals for guidance on operating parameters before attempting similar techniques on their patients.

BE SURE NOT TO MISS!

President’s Celebration Party
Friday, April 5, 7:30 pm – 10:30pm
Prairie ABC

Celebrate with Academy of Laser Dentistry at the Big Party. Enjoy drinks, food, dancing and music. Cocktail party attire. There’s always a surprise! RSVP at the Registration Desk by 2:00 pm on Thursday.

Space is limited. Reserve early
Be sure not to miss!

Wednesday, April 3, 7:00 pm – 7:30 pm • Bluestem 3
Conference Orientation:
How to Get the Most Knowledge and Enjoyment as a First-Time Attendee
Mel Burchman DDS, John G. Sulewski, MA
This presentation provides a guide to help attendees maximize their experience over the course of the conference and exhibition. It is designed for all participants, whether you are attending the conference for the first time, a new Academy of Laser Dentistry (ALD) member, considering purchasing your first laser, or a veteran user wishing to keep up with the latest developments. No previous knowledge of lasers is necessary. Maximize your experience during the annual conference and exhibition by targeting your attendance and participation in programs that meet your specific needs.

Wednesday, April 3, 7:30 pm – 8:30 pm • Carsu Patio
International Reception (by Invitation)
We look forward to welcoming all of our international attendees on Wednesday evening.

Thursday, April 4 – Saturday, April 6, 8:00 am – 9:00 am
Prairie Foyer on Thursday, Prairie DEF on Friday and Saturday
Spouse and Guest Breakfast
Meet and Greet with spouses and guests daily. Gather each morning for a light breakfast, catch up with long-time friends, meet new friends, discuss activities, and select something fun to do together. There’s so much to do in Dallas!

Thursday, April 4, 6:00 pm – 7:00 pm • Prairie DEF
Happy Hour hosted by Exhibitors

Thursday April 4, 7:00 pm – 10:00 pm • Prairie ABC
Heartland Dental Affiliation Open

FEATURED SOCIAL EVENT
Friday, April 5, 7:30 pm – 10:30pm • Prairie ABC
President’s Celebration Party
Celebrate with Academy of Laser Dentistry at the Big Party. Enjoy drinks, food, dancing and music. Cocktail party attire. There’s always a surprise! RSVP at the Registration Desk by 2:00 pm on Thursday. Space is limited. Reserve early.
The Academy of Laser Dentistry will conduct its general membership business meeting on April 5, 2019, during the Annual Conference. Academy President Dr. Raminta Mastis will provide an update on the Academy programs. Dr. Mel Burchman, Nominations Chair and President-Elect, will explain the selection process for ALD directors and officers and conduct the election. Eligible voting members present will be asked to vote to accept the nominees who will serve in the elective leadership positions for the Academy of Laser Dentistry.

**Agenda**

Call to Order, Dr. Raminta Mastis, President
Establish Quorum, Gail Siminovsky, CAE, Executive Director
Presidential Remarks, Introduction of Current Board and Chairs & Tribute to Dr. Art Levy, ALD President 2012
Academy Financial Report
Election of Officers and Board of Directors, Dr. Mel Burchman, Nominations Chair

The Nominations Committee has nominated these ALD members to serve as elected leaders:

**Nominated Officers 2019-2020**

- Ed Kusek, DDS, President-Elect
- Arun Darbar, BDS, Treasurer
- Samuel Low, DDS, MS, MEd, Secretary

**Nominated Board Members**

- Walid Altayeb, DDS, MSc, PhD, 2019-2022
- Laura Braswell, DDS, 2019-2022
- James Carreiro, DMD, 2019-2022

The President and Immediate Past President, as follows, pass automatically into these seats.

- Mel Burchman, DDS, President
- Raminta Mastis, DDS, Immediate Past President

**Continuing Directors-at-Large**

- Heather Angers, RDH, 2018-2021
- Keith Brewster, DDS, 2018-2021
- Charles Carpenter, DDS, 2017-2020
- Gerald Ross, DDS, 2018-2021
- Craig Sanford, DDS, 2017-2020
- Grace Sun, DDS, 2017-2020

The Board continues to adhere to 2017 bylaws change to reduce the number of seats on the ALD Board of Directors to 12 from 16 by attrition. In 2019, one seat is being eliminated. The editor position has not been appointed.

- New Business
- Adjournment
Many of the members of the Academy of Laser Dentistry submerge themselves in the dynamics of laser dentistry on a day-by-day basis. They put in long days at the office serving their patients, and in their “free time” dedicate themselves in even deeper ways. They spend time in research, developing new treatment techniques, write journal articles, teach at seminars, mentor colleagues, and spend countless hours volunteering on Academy committees. They do this without the thought of being given an award. The ALD has three awards to celebrate the hard work of its members: the T.H. Maiman Award for Excellence in Dental Laser Research, the Leon Goldman Award for Clinical Excellence, and the John G. Sulewski Distinguished Service Award for Outstanding Commitment and Contributions to the Academy. Because of the level of sacrifice our members are committed to, they understand the criteria required when nominating another member for one of these prestigious awards. Their nominees are above the standard and show such dedication and passion.

In 2019, ALD honors Dr. Nuran Çulcuoğlu as the 2019 Leon Goldman Award for Clinical Excellence, Juliana A. Barros, DDS, MS and Shalizeh “Shelly” A. Patel, DDS as the 2019 recipients of TH Maiman Award for Research Excellence and Dr. Walid Altayeb as the recipient of the 2019 John G. Sulewski Distinguished Service Award.

The Leon Goldman Award for Clinical Excellence

Nuran Çulcuoğlu, DDS, MSc
Private Practice, Istanbul, Turkey

Dr. Çulcuoğlu graduated from Ankara University Dental Faculty in 1977. She conducted research on dental-originated focal infections in the early 1980s. She achieved ALD’s Standard Proficiency certification in 1994 and Advanced Proficiency in 1996. Dr. Çulcuoğlu completed her MSc program at Genoa University in November 2014. She is practicing as a general dentist in Istanbul. Dr. Çulcuoğlu is a long-time ALD member and has attended just about every Academy of Laser Dentistry annual session for 25 years.

About this honor from Dr. Çulcuoğlu

Since my childhood I always wanted to be a scientist and do something for humanity. People are created beautifully and so, whether primitive or advanced, poor or rich, everyone deserves the best treatment especially about health. Continuing my work in accordance with this principle, I found laser dentistry. When I learned the capabilities of lasers, I felt like none of the treatments that I had been performing on my patients was sufficient. Finally in 1990, I joined a laser course in Birmingham, Michigan. Following the course I purchased a dLase 300 Nd:YAG dental laser and started incorporating laser treatments for my patients. In 1991, at the International Academy of Laser Dentistry meeting in Geneva, Professor Arthur Dugoni, who was the dean of the San Francisco University School of Dentistry, said, “These years are the golden age of dentistry! Implant treatment is a very important progress in dentistry, but laser treatment is a revolution because our patients can continue to use their own teeth.” That speech widened my horizon further and in time I observed this result in my own treatments. Today I continue to follow the progress of lasers closely. In light of high scientific technology, receiving this award for the clinical success I had due to my responsibility and respect toward my patients and their trust in me is a great honor.

I wish to express my thanks to the Awards Committee for honoring me with the Leon Goldman Award for Clinical Excellence.

Dr. Çulcuoğlu may be reached by email at nuranculcuoglu@gmail.com.
T.H. Maiman Award for Excellence in Dental Laser Research

Juliana A Barros, DDS, MS

About Juliana A Barros, DDS, MS
Associate Professor
Department of Restorative Dentistry & Prosthodontics
UTH | The University of Texas Health Science Center at Houston | School of Dentistry

Dr. Barros is an Associate Professor in the Department of Restorative Dentistry and Prosthodontics at The University of Texas School of Dentistry (UTSD) at Houston. She earned her DDS from the University of Uberaba, Brazil, in 1995. She has postgraduate training in Restorative Dentistry from the University of Michigan School of Dentistry. In addition, she earned a master’s degree in Laser Dentistry from the Nuclear and Energy Research Institute and University of São Paulo, Brazil. Recognizing great opportunities to advance knowledge and treatment in laser dentistry, she became the Director of Dental Laser Studies, and designed a didactic and laboratory-based teaching curriculum for laser education at the UTSD at Houston. She also collaborated with UTSD's Endodontics Department where she studied the effect of low-level laser irradiation on the migration and proliferation of dental follicle progenitor cells. She is also worked with UTSD’s Orthodontics Department in investigating the effects of low-level laser irradiation on bone regeneration and healing. Dr. Barros is currently collaborating with the Department of Diagnostic and Biomedical Sciences and Baylor College of Medicine Sjögren’s Syndrome Clinic in studying the effectiveness of photobiomodulation on xerostomia and sensory alterations. Dr. Barros lectures and conducts research in the fields of restorative dentistry, biomaterials, and hard/soft tissue laser applications. She developed the laser dentistry curriculum at the University of Texas Health Science Center (UTHealth) School of Dentistry at Houston and is the acting director of the laser clinic. Dr. Barros is a member of the Academy of Laser Dentistry’s University and Academy Relations Committee, American Dental Education Association, Academy of Operative Dentistry, International Association for Dental Research, and Consortium of Operative Dentistry Educators.

About this honor from Dr. Barros

I am deeply honored and humbled to receive the T.H. Maiman award. To be recognized by my peers for laser dentistry research and teaching is very special. Many years ago, when I first learned about lasers in the Special Laboratory of Lasers in Dentistry (LELO) in São Paulo, Brazil, I was completely amazed and intrigued. That experience inspired me to pursue a master’s degree in laser dentistry. Years later, as a faculty at the University of Texas School of Dentistry at Houston, I was determined to share my laser knowledge with my colleagues and students. This laser adventure started more than 10 years ago and has resulted in many CE courses, clinical teaching, and research. I could not have achieved all of this without my dear friend Dr. Patel and wonderful mentors Drs. Hoopingarner, Bouquot, Streckfus, Eduardo, and Zezell.

I wish to express my thanks to the Awards Committee for honoring me with the T.H. Maiman award for Excellence in Dental Laser Research.

Dr. Barros may be reached by e-mail at Juliana.Barros@uth.tmc.edu.
T.H. Maiman Award for Excellence in Dental Laser Research

Shalizeh “Shelly” A. Patel, DDS

About Shalizeh “Shelly” A. Patel, DDS
Associate Professor, Director of Clinical Simulation
Department of Restorative Dentistry & Prosthodontics
UTHealth | The University of Texas Health Science Center at Houston | School of Dentistry

Dr. Patel is an associate professor in the Department of Restorative Dentistry and Prosthodontics at the University of Texas School of Dentistry at Houston. She received her Doctor of Dental Surgery at the University of Texas Health Science Center at San Antonio Dental School in 2001. As the Director of Clinical Simulation, Dr. Patel is involved in simulation teaching, curriculum development, and research. She also designed the didactic, lab and clinic-based teaching curriculum in laser education at UTSD. She has served as the principal investigator/collaborator in several research projects in the field of caries diagnosis/management, laser dentistry, simulation, and advances in teaching and learning. These efforts have led to numerous scholarly publications, a textbook chapter, and a number of presentations at both state and national levels. In 2012 and 2015, Dr. Patel was recognized with the Dean’s Teaching Excellence Awards for “Innovation in Teaching” and the “Scholarship of Teaching,” respectively. She was the 2014 winner of the John H. Freeman Award for Faculty Teaching, as well. To serve her institution and the field of dental education, Dr. Patel is currently pursuing a master’s degree in education in Curriculum and Instruction.

About this honor from Dr. Patel

My desire to learn and discover knowledge in the field of laser dentistry has motivated me to initiate, collaborate and pursue scholarly investigation. As a result, I have discovered clinical avenues in dentistry that I did not dare to explore previously. I have studied the effects of photobiomodulation on tissue engineering and wound healing. I have provided palliative treatment options to patients with chronic xerostomia and facial pain. I have helped design surgical protocols for a laser-focused biopsy service. I have designed a robust laser curriculum and mentored countless of dental students and practicing dentists in pursue of their knowledge in laser dentistry; and somehow in the process, I have grown and learned the most. To me, this award acknowledges the spirit of collaboration, persistence, and advancement. Without my collaboration with my dear friend and colleague, Dr. Barros, and many other mentors such as Drs. Hoopingarner, Bouquot, and Streckfus, I would have never advanced in learning about lasers nor contributed in implementing a robust dental laser program at my institution, against all odds.

I wish to express my thanks to the Awards Committee for honoring me with the T.H. Maiman award for Excellence in Dental Laser Research.

Dr. Patel may be reached by e-mail at Shalizeh.Patel@uth.tmc.edu.
The John G. Sulewski Distinguished Service Award

Walid Altayeb, DDS, PhD, MSc

About Walid Altayeb, DDS, MSc, PhD, FALD, MALD
Private Practice, Abu Dhabi, United Arab Emirates (UAE)

Dr. Altayeb received his dental degree from the Faculty of Dentistry, Damascus University, in 1998 and completed his Master of Science in Periodontics in 2004 and Doctorate of Philosophy in Periodontics in 2007. He had been working as clinical supervisor in Department of Periodontics, Damascus University, Syria. Dr. Altayeb achieved an advanced level of knowledge in the application of lasers in dental science and patient treatment (Advanced Proficiency certificates from the Academy of Laser Dentistry in 980-nm diode and Er:YAG lasers). He has Mastership in the Academy of Laser Dentistry, is a member of the ALD Board of Directors and Speakers Bureau, Chair of the ALD International Relations Committee, and Founder and Chair of the ALD Gulf Laser Chapter. He is the founder of the laser section in the British Academy of Implant and Restorative Dentistry (BAIRD) and the founder of the Professional Diploma in Advanced Laser Dentistry of BAIRD. Dr. Altayeb conducts “Pink Aesthetics & Laser Dentistry” courses with the British Academy of Implant and Restorative Dentistry in Qatar, Bahrain, Saudi Arabia, Oman, and UAE. He has participated in many conferences in the Middle East and USA as a speaker in the fields of periodontal medicine and laser dentistry. He is working in private practice as a periodontist and implantologist in the Tamim Dental Polyclinic, Doha, Qatar, The British Lasik and Cosmetic Surgery Center, Dubai, UAE, and the Masters Dental and Aesthetic Center, Abu Dhabi, UAE.

About this honor from Dr. Altayeb

I am deeply honored to receive such an important award and to join past recipients who I have long admired and respected. I have experienced great support and love from my friends who embraced me from the first day of joining the ALD. I joined ALD in 2011 and attended my first ALD Conference in 2012 in Arizona. An enormous salute goes to John Sulewski. John’s distinguished work and professionalism inspires me to give my maximum to our family in ALD. From the moment I joined ALD, I knew it is the organization where I belong. Laser dentistry added many advantages to my career. Laser dentistry has allowed me to improve my skill and treatments results, and enhance my patient’s convenience and comfort. Laser dentistry gives me the chance to meet friends and colleagues from around the world and share with them the knowledge and the good times. Earning this award would not have been possible without the inspiration I have received from my friends and colleagues, for whom I have the deepest respect, and from whom I have derived the strength to challenge myself and perform better at each stage. So this award is not about me, but it’s about each of you as ALD leaders, speakers, and members. I look forward to successfully completing my mission in ALD and spread its values internationally. I promise to make all efforts to bring energy, passion, and optimism to the ALD. Coming together is a beginning; keeping together is progress; working together is success. Thank you!

I wish to express my thanks to the Awards Committee for honoring me with the John G. Sulewski Distinguished Service Award for Outstanding Commitment and Contributions to the Academy of Laser Dentistry.

Dr. Altayeb may be reached by email at draltayeb@hotmail.com.
Special Program: Pre-Conference Orientation

April 3, 2019 | 7:00 PM – 7:30 PM

Conference Orientation: How to Get the Most Knowledge and Enjoyment as a First-Time Attendee (111)

Mel Burchman, DDS, MALD 1; John G. Sulewski, MA 2
1 Private Practice, Langhorne, Pennsylvania, USA; 2 Institute for Advanced Dental Technologies, Huntington Woods, Michigan, USA

This presentation provides a guide to help attendees maximize their experience over the course of the conference and exhibition. What are the new attractions for 2019? What are the types of educational programs available on-site? Which ones offer an interactive, hands-on experience? Which ones present experimental usage, scientific findings, practice integration issues? What questions should you ask about instruments before purchasing? What opportunities are available for more casual and individualized interaction? What exactly does laser certification involve? For an objective view of these and other questions, plan to attend this informal session. It is designed for all participants, whether you are attending the conference for the first time, a new Academy of Laser Dentistry (ALD) member, considering purchasing your first laser, or a veteran user wishing to keep up with the latest developments. No previous knowledge of lasers is necessary.

Educational Objectives

• Maximize your experience during the annual conference and exhibition by targeting your attendance and participation in programs that meet your specific needs.

• Gain access to a Conference Orientation document that contains a checklist for evaluating lasers, resources for evaluating dental literature, and a list of U.S. FDA marketing clearances in laser dentistry.

Special Program: Investment Management

April 4, 2019 | 3:45 PM – 4:30 PM

The 3 P’s – Modern Approach to Investing

Mario A. Veneroso, JD, AIF; Jonathan Millman, CRPC, AIF
Kingsview Asset Management, Woodbury, New York, USA

This engagement highlights the three “P”s of investing: Planning, Portfolio Management, & Prudent Investment Advice. Attendees will discover how the general landscape of the financial markets is changing and how to benefit from these new trends (e.g., evolution of exchange-traded funds, or ETFs). Also presented is the importance of implementing sound investment principles such as asset allocation, diversification, and the importance of working with an advisor in a “Fiduciary Relationship.”

Learning Objectives

• Achieve a better understanding of the MVY Group’s Wealth Management Approach (3 P’s - Planning, Portfolio management, Prudent investment advice and monitoring).

• Discern how market trends are changing and what can an investor do to benefit from these developments

• Explain a Fiduciary relationship and why that matters.

NOTE: This presentation is made possible through an educational sponsorship by Kingsview Asset Management.
Special Program: American Dental Education Association (ADEA)

April 5, 2019 | 3:00 PM – 3:30 PM

Implementing Laser Technology into the Academic Curriculum

Scott D. Benjamin, DDS
Chair - ADEA's Lasers in Dentistry Special Interest Group;
Midwestern University, Colleges of Dental Medicine, Arizona and Illinois, USA;
Eastman Institute of Oral Health, University of Rochester, Rochester, New York, USA

The mission of dental educational institutions is to prepare the practitioners of tomorrow the ability to provide the best possible oral healthcare. The practice of dentistry is constantly evolving at an ever-increasing pace and the use of lasers and light-based technologies is a major part of this evolution. It is especially challenging for dental and dental hygiene schools to incorporate these enhancements to patient care into their already overcrowded curriculum even though they are becoming a routine part of today’s dental practices. Lasers, with their diversity of applications, expense, and safety considerations, are particularly challenging to incorporate into academic core curriculum both didactically and clinically.

Midwestern University has successfully addressed these challenges and has incorporated laser competency into their core curriculum both didactically and clinically. In their clinic, predoctoral students are routinely using laser technology as part of the daily care for their patients and are required to complete a laser competency for graduation. This was accomplished by having far-sighted administrative leadership along with comprehensive planning, and a faculty dedicated to preparing students for the future of oral health care. It was mandatory that the curriculum was science-based and that all regulatory and laser safety concerns and issues were considered and addressed before acquiring and implementing lasers into the curriculum.

Discussions will focus on the areas that need to be addressed before implementing lasers into the academic environment, the pitfalls that have been encountered, the challenges lasers present, and the benefit that laser education provides for the students and the university as a whole.

Educational Objectives

- Ascertain the challenges and benefits to implementing a laser curriculum into academia.
- Comprehend the faculty's role in laser education and how to get them appropriately trained and involved.
- Assess the physical and work-flow challenges that lasers may present in the school's clinical environment.
Special Program: Asset Protection

April 6, 2019 | 11:00 AM – 12:00 PM

Keys to Lawsuit Prevention, Medical License Protection, and Tax Savings (121)

Leland McKay, Legally Mine, Orem, Utah, USA

Medical professionals have unfortunately become all-too-easy targets for many trial attorneys! Learning how to use legal entities is vital to protect everything they have worked hard to achieve. Setting up C-Corps, S-Corps, and Limited Liability Companies (LLCs) is only part of the answer to this rapidly growing issue. This course will also instruct attendees on how to protect one of their most important assets, their medical license. Even if they are not sued for a larger amount than what their malpractice insurance covers, all medical professionals will encounter being investigated and possibly sanctioned for issues unrelated to the reported lawsuit. Utilizing these legal tools, in many cases, can decrease malpractice insurance costs and drastically reduce their income taxes – all while keeping their name and license from being reported to the National Practitioner Data Bank (NPDB).

Educational Objectives

• Maintain the focus of one’s medical practice on improved patient care rather than malpractice defense.
• Structure medical practices for lawsuit protection and prevention, improving overall operations management of the practice.
• Protect practice and professional assets from lawsuits through applied risk management techniques, improving and enhancing fiscal efficiency.
• Comprehend basic practice management tools that can help increase practice revenue as well as decrease unnecessary loss of revenue, also improving and enhancing fiscal efficiency.

This presentation is made possible through an educational sponsorship by Legally Mine, LTD.
General Session: Keynote Oral-Systemic Connection

April 4, 2019 | 8:15 AM - 9:15 AM

Assume Your Role as an Oral-Systemic Specialist – The Science and Practice of Oral Systemic Care (91)

Charles Whitney, MD, Revolutionary Health Services, Washington Crossing, Pennsylvania, USA

Evidence is increasingly making it clear that the health of the mouth directly affects the health of the whole body. Dental professionals need to be invited into the integrated medical model where we treat the person, not just the disease. Physicians should include oral health modules in their practices and refer to dentists as we do other health professionals if we are to maximally empower our patients to create health.

This program will ‘bridge the oral-systemic gap’ to inspire dental teams about the value of structuring oral-systemic care into their practices, while inspiring collegial collaboration with other health professionals, and educating the community. Participants will learn the science behind the many oral-systemic links, including the biologic plausibility that the common root cause is “oral bacteremia.” They will understand that periodontal and endodontic infections in the mouth drive the same inflammatory reactions throughout the body as they do in the mouth. Dental professionals will better understand the value of presenting cases from the perspective of preventing disease in the entire body, not just the mouth.

Educational Objectives

• Learn how to explain to patients and colleagues the concept of oral bacteremia and how oral health impacts overall health.
• Summarize the science behind the major oral-systemic links.
• Describe an approach on how to present the value of dental care on overall health during case presentations to patients.

This presentation is made possible through an educational sponsorship by Perio Protect, LLC.

General Session: Keynote Oral-Systemic Connection

April 4, 2019 | 9:15 AM - 10:15 AM

A Healthy Body Starts with a Healthy Mouth. How Oral Care Probiotics Enhance the Success of Laser Dentistry! (43)

Martin Handfield, MSc, PhD, ProBiora Health™ LLC, Tampa, Florida, USA

This course will present the history of oral care probiotics: their origin, science and mechanism of action, how they work with and against other bacteria in the mouth, what their benefits are, how they are best used daily, and, finally, how they will enhance the success of laser dentistry and other dental treatments and procedures.

Educational Objectives

• Discover how oral care probiotics work and their mechanism of action.
• Learn how the daily use of oral care probiotics will enhance and prolong the patient’s dental health.
• Learn how oral care probiotics work symbiotically with other treatments and procedures.

This presentation is made possible through an educational sponsorship by ProBiora Health, LLC.
General Session: Keynote Photobiomodulation (PBM)

Invention of Laser Biomodulation (105)

Andrew Mester, MD, Sansum Clinic, Santa Barbara, California, USA

Low-power laser biomodulation was invented 52 years ago and the first article was published in 1967 by Endre Mester, MD, in Budapest, Hungary. This presentation will review the basic research leading to clinical studies primarily in wound healing and in anti-inflammatory effects. Attendees will see original documentation and learn the development of the entire work of Dr. Mester and coworkers.

Educational Objectives

• Discuss the invention of laser photobiomodulation.
• Ascertained how low-intensity laser light can stimulate wound healing and tissue regeneration.
• Review studies of the anti-inflammatory effects of laser photobiomodulation.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.

General Session: Keynote Photobiomodulation (PBM)

Improving Brain Functions with Transcranial Photobiomodulation (106)

Lew Lim, PhD, MBA, Vielight Inc., Toronto, Ontario, Canada

The discovery of the effect of photobiomodulation (PBM) on the brain is relatively recent. While more research is being conducted, it is becoming clear that its simple application potentially improves brain functions significantly. Dr. Lew Lim, who has been behind the Vielight products, is driving research and innovation to push the knowledge boundaries for brain PBM. He will present both clinical and nonclinical (performance) outcomes, and how each one of us can improve mental performance with PBM, supported by evidence.

Educational Objectives

• Understand the potential of photobiomodulation therapy for the brain.
• Appreciate new understanding of the mechanisms involved.
• Gain knowledge of how to improve brain functions in normal brains (including cognition).

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
**General Session: Keynote Photobiomodulation (PBM)**

**April 5, 2019 | 9:30 AM - 10:00 AM**

**Biological Effects of Photobiomodulation: How PBM Works (26)**

_Jeri-Anne Lyons, PhD, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin, USA_

**Introduction:** It is accepted that light at various wavelengths elicits biological responses. Photobiomodulation Therapy (PBMT) with visible or near-infrared light (VIS/NIR) is a promising therapeutic strategy for a variety of disease states, including chronic wound healing, neurodegeneration, traumatic brain injury, and mitochondrial dysfunction. However, the mechanisms of action of PBMT are not fully characterized, hindering its general acceptance as a therapeutic modality and complicating its use in the clinical setting. Studies in cell culture systems and human and animal systems have demonstrated profound effects on the immune response and mitochondrial function leading to resolution of chronic inflammation, improved energy metabolism, and improve healing.

**Objectives:** The purpose of this presentation is to introduce the audience to the mechanisms of action of VIS/NIR PBMT on biological systems to allow for better outcomes in the clinical setting.

**Discussion/Conclusion:** The pathogenesis of many autoimmune conditions, including multiple sclerosis, and chronic wound healing are due to disruption of the immune response: prolonged or extensive expression of a pro-inflammatory immune response, which leads to extensive tissue destruction. Light in the VIS/NIR region of the spectrum is effective in the resolution of these conditions at least in part due to the upregulation of anti-inflammatory mechanisms and the downregulation of pro-inflammatory mechanisms. Likewise, when lasers at these wavelengths are used in the dental setting, similar effects on wound healing and resolution of chronic infection can be noted. In addition, lasers at these wavelengths may be expected promote healing.

**Educational Objectives**

- Summarize the effects of visible and near infrared light on the immune response.
- Identify the mechanisms of improved healing by photobiomodulation.
- Specify the consequences of a biphasic dose response to the application of PBM in the clinical setting.

*Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.*
Comprehensive Analysis of Gene Expression Related to Healing After Bone Ablation with Er:YAG Laser (109)

Yujin Ohsugi, DDS1; Akira Aoki, DDS, PhD1; Koji Mizutani, DDS, PhD1; Sayaka Katagiri, DDS, PhD1; Motohiro Komaki, DDS, PhD1; Masahiro Noda, DDS, PhD1; Toru Takagi, DDS, PhD1; Sho Kakizaki, DDS, PhD1; Yutaro Kitanaka, DDS1; Taichen Lin, DDS, PhD1; Walter Meinzer, DDS1; Yuichi Izumi, DDS, PhD1

1Tokyo Medical and Dental University, Tokyo, Japan; 2Kanagawa Dental University, Yokosuka, Kanagawa, Japan; 3Chung Shan Medical University Hospital, Taichung, Taiwan

Background: The Er:YAG laser is currently used for bone ablation. However, the effect of Er:YAG laser irradiation on bone healing remains unclear. The aim of this study was to investigate bone healing following ablation by laser irradiation as compared with bur drilling.

Materials and Methods: Wistar rat (10-week-old) calvarial bone was ablated using a 2940-m Er:YAG laser DELight, HOYA ConBio, Fremont, Calif., USA) or steel bur (10,000 rpm) with water coolant. Groove-like bone defects (85 mJ/pulse, 20 Hz) were created for scanning electron microscopic (SEM) analysis, histological analysis, evaluation of bone repair ratio, and granulation tissue analysis. To evaluate gene expressions in the treated bone tissue, rectangular area irradiation (127 mJ/pulse, 20 Hz) was also performed. The healing process was evaluated using in vivo micro-computed tomography (micro-CT) every 2 weeks until 8 weeks post-surgery. SEM and histological analyses were used to evaluate the bone healing. Microarray analysis was performed to evaluate comprehensive gene expressions in the treated bone at 6 hours after bone ablation. In the granulation tissue, mRNA expressions were evaluated at 1 week and protein expression was confirmed by immunohistochemistry at 2 weeks after surgery.

Results: The Er:YAG laser could effectively ablate bone tissue without major thermal changes. In the absence of bleeding, the bur-drilled site was covered by smear layer, whereas the laser-irradiated site showed characteristic microstructured rough surface with open canaliculi and lacunae. When the treated surface was exposed to bleeding, fibrin clot attachment was observed in both sites while the degree of attachment was much higher in the laser site. Laser-irradiated sites showed significantly higher bone repair ratios than bur-drilled sites at 2, 4, 6, and 8 weeks. Microarray analysis showed dramatic changes of gene expressions. Heat shock protein-related genes were increased in laser-irradiated bone, whereas inflammation-related genes were increased in bur-drilled bone. Surprisingly, DMPp1, the gene related to osteocyte maturation, was increased in the laser-irradiated bone. SOST, the gene that suppresses bone formation, was increased in the bur-drilled bone, whereas it decreased in laser-irradiated bone, compared to the control bone tissue (only removal of periosteum). Gene Set Enrichment Analysis (GSEA) can detect specific functions enriched in the bone. GSEA with hallmark gene sets revealed that IL-6/JAK/STAT3 signaling and inflammatory response gene sets were enriched in the bur-drilled bone. In the laser-irradiated bone, E2F, the gene set involved in cell cycle regulation, was enriched. In addition, alkaline phosphatase and osteocalcin mRNA expressions were increased in the granulation tissue of laser-irradiated sites. Increase of osteocalcin in the granulation tissue was also detected by immunohistochemistry.
**Conclusion:** This is the first study to comprehensively evaluate gene expression in ablated bone tissue following bur drilling and Er:YAG laser irradiation. The results of this study suggest that, compared to bur-drilling, the Er:YAG laser may produce accelerated early new bone formation in laser-ablated bone through the production of characteristic microstructure on the irradiated bone surface as well as the advantageous responses in the irradiated bone tissue.

**Educational Objectives**

- Enumerate the advantageous characteristics of Er:YAG laser in bone ablation.
- Comprehend the effects of Er:YAG laser in bone tissue.

**Note:** This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.

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**2019 Research Scholar: Presenting Results**

**April 4, 2019 | 3:15 PM – 3:25 PM**

**Immunomodulatory Activity Seen as a Result of Photobiomodulation Therapy in Stimulated Primary Periodontal Ligament Fibroblasts**

Cozy Ruan, Student  
*University of Tennessee College of Dentistry, Memphis, Tennessee, USA*

**Objectives:** To investigate and analyze distinct laser wavelengths (660 nm and 810 nm) and the effects of photobiomodulation therapy (PBMT) on human periodontal ligament fibroblasts (hPDLFs) stimulated with either *P. gingivalis* (P.g.) LPS (1 µg/ml), TNF-α (10 ng/ml), and/or IL-1β (1 ng/ml) via measurement of cytokines (IL-6) and chemokines (MCP-1).

**Methods:** Primary human periodontal ligament fibroblasts (hPDLFs) (Lonza, Walkersville, Md., USA) (CC-7049) were utilized in this study. Cells were cultured in the manufacturer’s recommended stromal cell basal medium (SCBM, CC-3204) with 5% fetal bovine serum (FBS) and SingleQuot Kit Supplements & Growth Factors (SCGM, CC-4181). The cells were taken from healthy individuals who were negative for HIV-I, Hepatitis B Virus, and Hepatitis C Virus. Furthermore, these fibroblasts were validated via pan cytokeratin staining by Lonza. Cells were seeded at densities of 20,000 cells/well in 96-well polystyrene flat bottom plates. The medium was changed after 24 hours to stromal cell growth medium (SCGM) containing 1% FBS, Penicillin (100 U/ml), and Streptomycin (100 µg/ml) for another 24 hr at 37°C, 5% CO₂, to synchronize cell activity. IL-1β was added either an hour before or simultaneously with respective laser irradiation. Dose-response was measured by aspirating the conditioned medium after 24 hours and transferring the conditioned media in Mesoscale Discovery Human Cytokine/Chemokine U-Plex kit (Meso Scale Diagnostics, Rockville, Md., USA). Cytotoxic effects of diode laser wavelengths 660 nm and 810 nm (LX2, THOR Photomedicine, Chesham, UK; MedX LPS 200, MedX Electronics, Mississauga, Ontario, Canada; Gemini, Ultradent Products, South Jordan, Utah, USA) dosed to achieve 8 J/cm² were assessed by measuring the effects on cellular (mitochondrial) dehydrogenase activity. In the immunoassay, Pg. LPS, TNF-α, and/or IL-1β were added an hour prior to yield inflammation, then exposed to respective wavelength(s) (8 J/cm²). The IL-6 and MCP-1 production were measured using Mesoscale Discovery (MSD) Human Pro-Inflammatory IL-6 V-Plex and Chemokine MCP-1 V-Plex kits and analyzed using an MSD Sector 2400 machine (Meso Scale Diagnostics, Rockville, Md., USA).
**Results:** P.g. LPS exhibited levels in IL-6 and MCP-1 that were not significant from the control. TNF-α, and IL-1β significantly elevated IL-6 and MCP-1 levels, which was further elevated by irradiation with 660 nm. The 660-nm wavelength led to an increase in both cytokine IL-6 and chemokine MCP-1. The 810-nm wavelength laser exhibited suppressive responses and completely abolished both IL-6 and MCP-1 levels induced by IL-1β. However, TNF-α-stimulated by 810-nm laser exhibited significant suppression of IL-6 levels, while increasing MCP-1 levels significantly.

**Conclusions:** A larger study is warranted to examine the effects of PBMT with individual or combinations of wavelengths to explore anti-inflammatory effects via measurement of cytokine and chemokine elevation in inflammatory conditions. PBMT may lead to the development of a novel approach in periodontal therapy, which will aid in strategies to improve public oral health.

**Educational Objectives**
- Outline a method of assessing the cytotoxic effects of various laser wavelengths on cellular dehydrogenase activity on human periodontal ligament fibroblasts.
- Determine the optimal wavelength laser beam that can reduce endogenous inflammatory responses.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.

**2019 Research Scholar: Presenting Results**

April 4, 2019 | 3:25 PM – 3:35 PM

**A Detailed Study of Root Surface Preparation Comparing Various Modalities of Traditional vs. Er,Cr:YSGG Laser Treatments**

Juliana Valk, Student
University of Tennessee Health Science Center College of Dentistry, Memphis, Tennessee, USA

**Objectives:** The objective of this study was to compare traditional and nontraditional (laser) methods of root surface preparation to create the most favorable surface for fibroblast attachment.

**Methods:** Extracted 3rd molar roots were hand-scaled and treated with ultrasonic, piezo, and various Er,Cr:YSGG laser tips and settings for 15 seconds each. Evaluation was completed via scanning electron microscopic (SEM) analysis.

**Results:** SEM analysis showed differences in surface roughness between all groups (n = 60). Laser Group 9 (side-firing tip with 37.5 mJ/pulse and 40 Hz) produced what we feel would be the most ideal root surface for fibroblast attachment.

**Conclusions:** An Er,Cr:YSGG laser may be used to create a uniformly rough root surface in order to maximize fibroblast attachment and retention. Based on this study, there should be a deeper examination into the settings currently being recommended, as significant cementum modification can be seen using 50 mJ/pulse and 30 Hz, with a radial-firing tip (manufacturer’s recommendation). Next steps will include a comparison of these treatment methods while cultivating fibroblasts.

**Educational Objectives**
- Differentiate root surfaces prepared with hand and ultrasonic vs. Er,Cr:YSGG laser.
- Relate how three different laser tips affects the surface texture of a prepared root.
- Characterize what an aggressively laser-treated root surface looks like.
2019 Research Scholar: Presenting Results

April 4, 2019  |  3:35 PM – 3:45 pm

The Efficacy of Preprocedural Laser Bacterial Reduction (51)

Mary Lynn Smith, RDH, Private Practice, McPherson, Kansas, USA

It is common practice for hygienists to provide laser bacterial reduction prior to any probing or instrumentation in the hygiene appointment. The purpose is to assist in reducing bacterial load and therefore reducing risk of transient bacteremia and cross-contamination throughout the mouth. In an effort to reduce these concerns, forward-thinking clinicians have employed lasers to reduce bacterial load prior to any probing or instrumentation specifically during the hygiene appointment. It is a simple procedure and requires approximately 5 minutes to complete according to common practices. Research supports that bacterial reduction does in fact occur with the application of laser energy within the periodontal pocket. However, the research has not been applied in a standardized protocol in daily practices. This pilot study was designed to investigate the reduction of bacterial load at commonly used parameters and therefore support the procedure of laser bacterial reduction prior to probing or instrumentation. Laser settings used in the study followed revised parameters published in 2018 by AMD, the manufacturer of the Picasso Plus laser. The findings of this study are important in strengthening today’s best practices.

Educational Objectives

- Define preprocedural laser bacterial reduction.
- Understand the purpose of preprocedural laser bacterial reduction.
- Discuss the pros and cons of preprocedural bacterial reduction prior to dental hygiene services.
- Describe one technique of preprocedural laser bacterial reduction.
Diode Lasers

April 4, 2019 | 10:45 AM - 11:15 AM

**Bone Regeneration Using a Diode Laser (79)**

Laura Braswell, DDS, Buckhead Periodontics, Atlanta, Georgia, USA

Research has shown that the Nd:YAG laser is effective for bone regeneration. The diode laser can also be used for bone regeneration around implants and natural teeth. A technique will be presented for treating periodontitis and peri-implantitis with the ultimate goal of new bone for both tooth and/or implant retention. This step-by-step protocol will explain the purpose and science behind the process showing clinical and radiographic success. Problem cases will also be shown with theoretical concepts of what could have gone wrong. By reviewing our successes and our complications we can all improve our clinical outcomes.

**Educational Objectives**

- Summarize a clinical case of bone regeneration using a diode laser.
- Discuss a clinical technique for treating periodontitis and peri-implantitis with a diode laser.
- Provide a platform to stimulate future investigation into hard tissue regeneration using lasers.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.

April 4, 2019 | 11:15 AM - 12:15 PM

**Treatment with 980-nm Diode Laser: Assessment of Different Tips Using TiO₂ Initiation (60)**

Kyoju Nakajima, DDS, PhD, Ōarai Nakajima Dental Clinic, Ōarai-machi, Japan

The purpose of this case presentation is to demonstrate the effectiveness of an alternative laser-based technique using small surgical wounds to enable removal of the internal diseased tissue. This case compared the effectiveness of quartz fiber tip and sapphire tip initiation with titanium dioxide (TiO₂).

**Materials and Methods:** In this special and rare case, two conditions in one patient are presented, one involving a residual cyst on the right side of the mandible, and the other a fibroma tumor on the left side of the mandible.

**Diagnoses:** (1) Root granuloma at tooth site #21, occurring after tooth extraction at another dental clinic. (2) Fibroma at tooth sites #33-34, where teeth were lost several years prior.

**Treatment:** Different tips (quartz fiber and sapphire) of a 980-nm diode laser (Alta, Dental Photonics, Walpole, Mass., USA) were initiated with TiO₂. A small (1 mm or less) hole was drilled through the buccal gingiva into the cortical plate at a spot near the center of the lesion. The laser tip was inserted through the hole into the cystic cavity, and, prior to irradiation, was manipulated to determine the distance to the bone of the surrounding wall. The effectiveness of the different tips initiated with TiO₂ were compared when the same power settings were used.

**Results:** Bone regeneration was shown in this and several other clinical cases involving the described laser-assisted technique. The tips initiated with TiO₂ vaporized the hard tissues. The sapphire tip initiated with TiO₂ was the most effective.
**Conclusion:** In cases of mandibular cysts, the use of a minimally invasive laser technique to remove granulation tissue and preserve the tissue walls enable minimization of bone loss and promotion of bone regeneration. The results demonstrated the possibility of hard tissue vaporization with diode laser tips initiated TiO2.

**Educational Objectives**

- Compare the effectiveness of two different 980-nm diode laser tips initiated with titanium dioxide
- Characterize the ability of these tips to vaporize hard tissue.

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**April 4, 2019 | 12:15 PM - 12:45 PM**

**Problems with Diode Lasers in Implant Therapy (66)**

Georgios Romanos, DDS, PhD, Prof.Dr.med.dent.
Stony Brook University, Stony Brook, New York, USA

In implant dentistry, lasers can be used for peri-implant soft tissue management as well as decontamination of the implant surfaces and bone. The objective of this presentation is to discuss the effects on implants using diode lasers and to demonstrate protocols that may avoid complications such as overheating.

**Educational Objectives**

- Demonstrate protocols of treatment using diode laser wavelengths.
- Describe the management of complications involving diode laser irradiation.
- Improve protocols for peri-implantitis treatment.
- Identify the most reliable diode laser for management of overheating.
Endodontics

April 5, 2019 | 3:15 PM - 3:30 PM

Debris and Smear Layer Removal from Root Canal Walls by Er,Cr: YSGG Laser Irradiation (39)

Sara Ehsani, DDS1, Behnam Bolhari, DDS2
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Introduction: Many studies have shown that the smear layer and debris of root canals impede the penetration of antimicrobial irrigants, medicaments, and sealers into the dentinal tubules, and thus potentially compromise the seal and disinfection of root canals. A correlation has been found between smear layer removal and increased periapical healing. Laser treatment is a relatively new approach for cleaning and disinfecting the root canals. Different lasers such as Er:YAG, Er,Cr:YSGG, Nd:YAG, and diode have been used in the removal of debris and smear layer of the root canal wall. However, there is lack of evidence to support that laser use is superior to the conventional endodontic disinfection and irrigation treatment using ethylenediaminetetraacetic acid (EDTA) and sodium hypochlorite (NaOCl). Also previous studies did not evaluate the quality of smear layer and debris removal in all three segments of the root canal space.

Objective: The aim of this study was to evaluate the effectiveness of the erbium, chromium:yttrium-scandium-gallium-garnet (Er,Cr:YSGG) laser in removing debris and the smear layer on the apical, middle, and coronal segments of root canal walls.

Materials and Methods: A total of 60 single-rooted human teeth were included in this study. After preparation and instrumentation of the canals, samples were divided into four groups, which included three experimental groups (groups 1, 2, and 3), and one positive control group (group 4) which received no further treatment. In group 1, final irrigation was performed using 17% EDTA, followed by 5.25% NaOCl. In group 2, samples were treated with a 2780-nm Er,Cr:YSGG laser with an output power of 1.5 W. The same laser was used in group 3, but with an output power of 2.5 W. Scanning electron microscope (SEM) images from the coronal, middle, and apical thirds of the roots were prepared and evaluated for both smear layer and debris removal by three blinded observers.

Results: The control group showed a heavy smear layer, significantly different from all experimental groups. No significant difference was observed between groups 1 and 2 in all three sections of the root canals. In group 3, substantial amounts of smear layer were observed with several areas of thermal damage to the dentinal walls. In all experimental groups, the SEM results of the apical third of the canals presented the highest amounts of smear layer and debris left remaining. In the coronal third of the canals, the quality of debris removal was significantly better in group 1 than in group 2, and it was significantly better in group 2 than in group 3. In the middle and apical thirds of the canals, group 1 showed significantly better results than each of the laser groups. There was no significant difference between the laser groups regarding debris removal in the middle and apical thirds of the canal walls.

Conclusion: This study raises questions about the overall cleaning abilities of Er,Cr:YSGG lasers. The study showed a similar degree of effectiveness in smear layer removal to that of conventional treatment with EDTA and NaOCl irrigation. However, the conventional method of EDTA and NaOCl irrigation had better effects on debris removal from the root canal walls compared to application of Er,Cr:YSGG laser.

Educational Objectives

• Summarize the effectiveness of an Er,Cr:YSGG laser in root canal smear layer removal.
• Compare laser and conventional methods in root canal debris removal.
April 5, 2019 | 3:30 PM - 4:15 PM

**Laser-Assisted Endodontics – It’s Not Just About Disinfection (42)**

Justin Kolnick, DDS, Advanced Endodontics of Westchester, White Plains, New York, USA

While root canal cleaning and disinfection is the primary focus of laser-assisted endodontics, there are other significant applications for lasers in endodontic therapy. The challenges presented and complications encountered while negotiating complex and anatomically challenging root canal systems are numerous, often frustrating to overcome, time-intensive, adding significant stress to both the dentist and patient. This presentation will highlight the role of lasers in overcoming these obstacles and will introduce new laser concepts such as Laser Patency and Laser Recapitulation within the context of emerging trends in endodontics. The importance and complexities of the apical third of root canal systems will be reviewed and a new, minimally invasive treatment concept, Radial Apical Cleansing, will be presented for the successful management of this critical area. Clinical situations such as loss of patency due to calcification, blockages, ledging, or complex canal anatomy will also be addressed.

**Educational Objectives**

- Discuss biofilms in apical periodontitis and the limitations of current treatment protocols in complex root canal systems.
- Appreciate the benefits the laser provides for apical cleansing, specifically in the management of refractory disease.
- Understand how lasers work and the role of lasers in Radial Apical Cleansing – a new protocol for the management of the apical third of the root.
- Comprehend the many useful applications of a laser in endodontics.

April 5, 2019 | 4:15 PM - 5:00 PM

**Laser Endodontics Using SWEEPS: Bringing Endodontics to the Next Level (102)**

Giovanni Olivi, MD, DDS, InLaser, Rome, Italy

Shock wave enhanced emission photoacoustic streaming (SWEEPS) is an advanced laser-activated irrigation process by which photons are emitted at a precise time delay and in a very short time. SWEEPS utilizes different conical or flat tips that allows for propagation of the generated shock wave in liquids at subablative levels, allowing for effective three-dimensional streaming of fluids and avoiding the possibility of thermal damage when the correct specific parameters and protocols are used. By virtue of the lower energy used and the generated high peak power, and its easy positioning far from the apex, SWEEPS provides safe and effective activation for exchange of irrigants. The use of sodium hypochlorite (NaOCl) and ethylenediaminetetraacetic acid (EDTA) along with the correct protocol improves the cleaning and decontaminating effect for root canals when compared to conventional methods. Research, clinical cases, videos will introduce the audience to “Next-Level” endodontics.

**Educational Objectives**

- Differentiate between conventional laser disinfection procedures, antimicrobial photodynamic therapy (aPDT), laser-activated irrigation (LAI), and photon-induced photoacoustic streaming (PIPS).
- Explain the technology behind the evolution of SWEEPS.
- Relate the practical and clinical advantages of PIPS/SWEEPS technology.
Erbium Lasers

April 5, 2019 | 3:30 PM - 4:00 PM

Er:YAG Laser in Everyday Dentistry (59)

Blake Cameron, DDS, Private Practice, Logan, Utah, USA

The Er:YAG laser can be effectively used for a variety of everyday, general dentistry procedures. This presentation reviews its use for fillings, frenectomies, root canals, extractions, troughing, and more to demonstrate how the Er:YAG laser wavelength can efficiently make dentistry more fun and efficient.

Educational Objectives

- Enumerate the applications of the Er:YAG laser in general dentistry.
- Describe how the Er:YAG laser can improve efficiencies of intraoral treatments.

April 5, 2019 | 4:00 PM - 4:30 PM

Evaluation of the Safety and Efficiency for Different Pulse Durations of an Er:YAG Laser During Ceramic Bracket Debonding (29)

Dr. Mountaha Al Hage, Private Practice, Algiers, Algeria

Background: Debonding of ceramic brackets using an Er:YAG laser has become an acceptable method to facilitate the removal of such type of brackets. Therefore, research has been conducted to establish safer and more effective techniques to carry out such procedures. The laser pulse duration is one of the most critical parameters with respect to thermal effect on the pulp vitality.

Objectives: The goal of the current research is to evaluate the safety and efficiency of different Er:YAG laser pulse durations in order to establish safe and effective protocols of debonding ceramic brackets.

Material and Methods: The sample consisted of 45 premolars that had been extracted for orthodontic purposes. A ceramic bracket was bonded to each tooth. The sample was divided into three groups: 15 teeth each per group for pulse durations of 50 µs, 100 µs, and 300 µs, respectively. All the ceramic brackets were exposed to the Er:YAG laser for 6 s by a laser scanning method, with the same air and water conditions, as well as the same pulse energy and repetition rate. The tooth temperature was monitored during debonding of the brackets by a thermal camera, and the ceramic bracket was debonded after 10 s. Subsequently, the samples were examined under a microscope to evaluate the presence of the adhesive material.

Results: The results showed the absence of a statistically significant difference between the pulse durations of 50, 100 and 300 µs in relation to the rise in temperature of the tooth. However, the 50-µs group demonstrated a significantly lower level of adhesive material compared to both the 100-µs and 300-µs groups. Further, no statistically significant difference was found between the 100-µs and 300-µs groups.

Conclusions: Within the limits of this study, both Er:YAG pulse durations of 100 and 300 µs are preferred during ceramic brackets debonding using the laser scanning method.

Educational Objectives

- Evaluate the safety and efficiency of different Er:YAG laser pulse durations for debonding ceramic brackets.
- Establish safe and effective protocols for debonding ceramic brackets.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
Proper Care and Maintenance of an Erbium Laser Will Improve Longevity and Performance (52)

Aric Sven, Associates in Electronics, Sventech Inc., Antioch, Illinois, USA

Maintenance of an erbium laser will not only promote longer life it will keep the laser working efficiently and maximize its performance. By studying the components used to build an erbium clinicians will learn why it is important to keep regular service intervals and what to look for when a service technician is performing this maintenance. The maintenance and care of the different delivery systems will also be discussed.

Educational Objectives

- Identify the components that make up an erbium laser.
- Explain why regular service intervals are important.
- Learn how to handle and care for the delivery system.

General Applications

Prosthodontic rehabilitations have been increasingly dependent on periodontal and oral medicine deficiencies, have increased exponentially in both prevalence and incidence in the past decade, and have yet remained a clinical diagnostic and treatment challenge in properly maintaining the overall facial configuration inherent to respecting the ideal facial vertical dimension during rehabilitation. The challenge is due to both the complexity of interdisciplinary divergent interactions, and also due to alternative prosthetic treatments, such as invasive bone reductions with implant prosthetic rehabilitation, which continues to focus on quick-turnover clinical outcomes and bypasses the significance of etiological-based physiological tissue mechanisms of rehabilitation. As public demand continues to grow for aesthetic-driven therapeutics, Vertical Dimension selection and TMJ position continue to propose a difficult clinical challenge, not just for predictable oral health and aesthetic reconstructions, but also for predictable facial plastic rehabilitations. Optimal clinical results are highly dependent on accurate diagnosis and treatment planning. Laser protocols have proven to be crucial for consistent, reproducible, stable clinical results, which can assist in targeting biologic tissue optimization and healing, eliminating the need for invasive and high risk treatment options. However, management of the vertical dimension of occlusion (VDO) and temporomandibular disorder (TMD) treatment protocols require integration and dependency of appropriate etiologic mechanisms and not be bypassed to ensure optimal and repeated clinical outcomes. This discussion will highlight the ever-crucial nuances of superior etiologic-based clinical protocols of laser therapy in the perio-pros-oral medicine triangle to direct synergistic prognosis with reproducible results. This would render further proof of supporting the need for more minimally invasive aesthetic and functional rehabilitative restorations in function of etiologically sound prosthodontic-periodontal-oral medicine protocols in private practice.

Educational Objectives

- Appreciate custom laser protocols for Peri-Pro-Pros-Oral Medicine integrative functional and aesthetic rehabilitation.
- Understand the importance of tissue retention and enhancement based on etiologic mechanism vs. partial symptom variable(s).
Laser Protocol Adaptations for Aesthetic and Functional Reconstructions in Women’s Oral Health Interdisciplinary Diagnosis and Treatment Planning (62)

Claudia C. Cotca, DDS, MPH, Washington Institute For Dentistry and Laser Surgery, Chevy Chase, Maryland, USA

The Women’s Oral Health model has been a theoretical science pursuit, currently incomplete, and mostly supported by academic research interest. However, it has also suffered limited impact on mainstream clinical private practice treatment demands, particularly in the specialty of functional and aesthetic oral rehabilitation. Given the current rapid ever-changing genomic and phenotypic complexities in the systemic and oral health models, implications of underappreciated women’s oral health and clinical pathology nuances, such as the periodontium matrix, not only lead to functional rehabilitative shortcomings but limit aesthetic prognosis in reconstructive cases. As public demand continues to grow for aesthetic driven-therapeutics, accurate oral health diagnosis and staging remains foundational for predictable oral health and aesthetic reconstructions. Optimal clinical results are highly dependent on accurate diagnosis and treatment planning, especially in women’s oral health. Laser protocols are not only deemed crucial for predictable, reproducible and stable clinical results, but require refined diagnostic tissue filters adapted in real-time treatment application to produce consistently optimal laser protocol results. This custom multifactorial clinical protocol approach reflects the ability of laser-specific applications to reproducibly improve clinical prognosis in the systemically driven women’s oral health profile. Furthermore, this interdisciplinary science-based approach can be adapted to laser applications in other systemic dependent clinical models.

Educational Objectives

- Identify and implement systemic oral health model variables.
- Understand and implement custom laser protocols that demand systemic-based oral health etiologic models.

Longevity and Safety Clinical Guidance in Aesthetic Laser Dentistry (58)

Shigeyuki Nagai, DDS, PhD, Nagai Dental Clinic, Tokyo, Japan

Dental lasers have been used to correct the shape and the color of dental hard and soft tissues in esthetic dentistry, including vital tooth whitening, removal of melanin pigmentation of the soft tissue, removal of amalgam tattoo, crown lengthening and shaping of gingival margins. sAll laser wavelengths can be used for the soft tissue treatment. Er:YAG, Er,Cr:YSGG, 9.3-μm CO₂ lasers can be used for hard tissue treatment. Clinical cases will be presented to demonstrate the achievement of better results and longevity of treatment. Also discussed are possible accidents which can be caused by inappropriate laser treatment especially in esthetic dentistry.

Educational Objectives

- Understand the optimum techniques for different laser wavelengths in aesthetic procedures.
- Describe possible accidents that can occur as a result of inappropriate aesthetic laser treatment.
- Comprehend the significance of clinical safety in laser dentistry.
Hygiene

April 4, 2019 | 10:45 AM - 11:15 AM

The Diode Laser as Standard of Care for a Comprehensive Wellness Program (49)

Camille M. Luke, RDH, MSDH, Tumwater, Washington, USA

The hygiene department is at the heart of developing a comprehensive wellness model within the dental practice. Hygienists are at the front line in addressing the inflammatory process and providing patients with information and education for improved health. Incorporating a diode laser into your hygiene department not only creates healthy patients, it also creates a healthy, successful hygiene wellness program. Developing effective and consistent systems and protocols for using the laser are keys to this success. Discussing the benefits of incorporating laser therapy for improved health requires a consistent message from each team member the patient comes in contact with. Being armed with correct verbiage to discuss the benefits of laser therapy and how it provides an elevated level of care can help team members successfully enroll patients in a comprehensive wellness program. Providing the team with responses to frequently asked questions and the knowledge to effectively explain the benefits of laser therapy is key to increasing case acceptance. Information in this course is designed to assist the hygienists, the assistants, and the administrative team in presenting laser therapy as a standard of care for improving patients’ health.

Educational Objectives

• Effectively explain, in patient terms, the benefits of using a diode laser.
• Understand the steps in developing a protocol that incorporates the diode laser into the dental hygiene standard of care.

April 4, 2019 | 11:15 AM - 11:45 AM

Laser Safety Around Implants (45)

Heather Angers, RDH, Belmar Park Dental Care, PC, Lakewood, Colorado, USA

Lasers are utilized for many applications in dental hygiene, one of which is the use of lasers around dental implants. This lecture will examine how to recognize disease vs health and how to effectively and safely use lasers around dental implants in the day-to-day routine.

Educational Objectives

• Review basic laser safety and safety around implants, i.e., tip angulation, irradiation duration, and power levels.
• List the types of lasers that are the most safe and the lasers that are the least safe.
• Define a diseased pocket versus a healthy pocket around implants.
April 4, 2019 | 11:45 AM - 12:15 PM

The Efficacy of Preprocedural Laser Bacterial Reduction (S1)

Mary Lynn Smith, RDH, Private Practice, McPherson, Kansas, USA

It is common practice for hygienists to provide laser bacterial reduction prior to any probing or instrumentation in the hygiene appointment. The purpose is to assist in reducing bacterial load and therefore reducing risk of transient bacteremia and cross-contamination throughout the mouth. In an effort to reduce these concerns, forward-thinking clinicians have employed lasers to reduce bacterial load prior to any probing or instrumentation specifically during the hygiene appointment. It is a simple procedure and requires approximately 5 minutes to complete according to common practices. Research supports that bacterial reduction does in fact occur with the application of laser energy within the periodontal pocket. However, the research has not been applied in a standardized protocol in daily practices. This pilot study was designed to investigate the reduction of bacterial load at commonly used parameters and therefore support the procedure of laser bacterial reduction prior to probing or instrumentation. Laser settings used in the study followed revised parameters published in 2018 by AMD, the manufacturer of the Picasso Plus laser. The findings of this study are important in strengthening today’s best practices.

Educational Objectives

- Define preprocedural laser bacterial reduction.
- Understand the purpose of preprocedural laser bacterial reduction.
- Discuss the pros and cons of preprocedural bacterial reduction prior to dental hygiene services.
- Describe one technique of preprocedural laser bacterial reduction.
April 4, 2019 | 12:15 PM - 12:45 PM

**Periodontal Endoscopy and Laser Bacterial Reduction as a Nonsurgical Treatment Solution for Periodontal and Peri-Implant Diseases (22)**

Nicole Fortune, RDH, MBA, Private Practice, Richmond, Vermont, USA

As students we were taught that periodontal bone loss associated with periodontitis could not be regenerated without surgical procedures that include the addition of bone grafting materials. In many cases these surgeries are the first exposure the patient has to advanced periodontal and peri-implantitis care. Although traditional surgical approaches are well documented, current technology offers dentistry and our patients nonsurgical treatment solutions for moderate-to-advanced periodontal and peri-implant diseases. Through intra-professional communication and treatment planning, laser-assisted periodontal endoscopy is a predictable noninvasive treatment option. This course will demonstrate the role of periodontal endoscopy in nonsurgical treatment of periodontal disease and peri-implant diseases. The advanced diagnostics of magnified subgingival visualization allow the clinician to identify periodontal and peri-implant etiologies and potential complications with healing. The use of subgingival visualization allows the clinician to thoroughly decontaminate the tooth and implant surface. This creates an ideal environment for gingival attachment and, in some cases, bone regeneration. The utilization of periodontal endoscopy in conjunction with other treatment aids such as lasers and air polishers is a noninvasive, tissue-sparing technique that restores health. Combined with individualized patient care to reduce host inflammation, enhanced visualization is a powerful tool that will prove to be the new standard of care in nonsurgical treatment of periodontal and peri-implant disease.

**Educational Objectives**

- Explain how perioscopy is a standard of care for treatment of moderate-to-advanced periodontal and peri-implant diseases.
- Comprehend under what conditions periodontal endoscopy is ideally utilized and when regenerative surgery is indicated.
- Discuss the use of treatment aids, such as lasers, to enhance clinical results.
Laser Safety / Laser Fundamentals

April 6, 2019 | 8:30 AM - 10:00 AM

Laser Safety Officer Training (Module 1 of 2) (64)

Keith Brewster, DDS; Scott Benjamin, DDS

1Private Practice, Dallas, TX; 2Private Practice, Sidney, NY

A good understanding of the scientific fundamentals of lasers provides a fresh appreciation of the technological advancements in this field and how this affects applications. Laser technology is exploding: new wavelengths are being introduced to the marketplace, a wider range of parameters are available than ever before, Photobiomodulation (LLLT) is becoming more prevalent, etc. A solid understanding of the physics is central to absolutely knowing what is happening on and inside the tissue being treated, how to manipulate parameters for various conditions and results, and why preset parameters aren’t always the best option.

This course is a crash course in laser physics focused on filling a need for a basic understanding of laser-tissue interactions, but also presents more advanced topics in the key principles of the physical and biophysical part of laser dentistry.

This course will cover from how a laser is constructed (and we’re light years ahead of Maiman’s first ruby laser…) to what determines the laser’s power, intensity, energy, wavelength, spot size, laser pulses, beam divergence, efficiency. Topics include the transmission of light, its effect on tissues, and unique characteristics of various lasers.

*NOTE: The Laser Fundamentals Module 1 or Standard Certification serves as a pre-requisite for the Laser Safety Officer Training - Implementing a Laser Safety Program. A basic understanding of how a laser operates helps in understanding the hazards when using a laser device.

Educational Objectives

• Convey sufficient fundamental knowledge in order to more appropriately assess a laser’s usefulness for a specific purpose and to understand its limitations.
• Provide some basic information on many of the latest types of lasers.
• Lead the attendee logically from the basics of laser action to advanced topics in laser physics.
• Illuminate the minds of attendees with the science of illumination.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
April 6, 2019 | 1:30 PM - 4:30 PM

**Laser Safety Officer Training (Module 2 of 2) (100)**

Keith Brewster, DDS¹; Scott Benjamin, DDS²
¹Private Practice, Dallas, Texas, USA; ²Private Practice, Sidney, New York, USA

This course will address the specific duties of a Laser Safety Officer (LSO) necessary to meet the safety requirements in the ANSI Z136.1 and Z136.3 American National Standard for the Safe Use of Lasers in Health Care as it relates to dentistry. This course is designed specifically for the dental care settings and will help guide participants in developing and implementing a laser safety program. It emphasizes hazard identification and safe work practices that apply to all laser operators, and includes the changes in the latest revision of the standards. The science of lasers, their classifications and terminology, and the components of a health care laser system (HCLS) will be included. Safety concerns and considerations will focus on potential issues for both laser beam dangers and non-beam hazards including electrical, respiratory, fire hazards, as well as human factors. Laser engineering controls and safety mechanisms will also be covered. LSO’s role and responsibilities will be discussed along with procedural and administrative controls that need to be in place at every laser facility. A basic understanding and necessary laser forms of how to develop a laser safety program for a dental office/facility will be part of this program. This type of educational program must be completed by the practice’s LSO to enable the mandated registration of their Class 4 laser devices with various state regulatory agencies that may require specific laser safety officer training. This program meets most state requirements for the practice’s Laser Safety Officer which may be required for laser & LSO registration.

**Educational Objectives**

- Attain a basic understanding of laser physics and wavelengths of lasers used in dentistry.
- Gain a working knowledge of how to use a laser safely in the dental office setting.
- Understand the role and responsibilities of a Laser Safety Officer.
- Attain a basic understanding to develop and maintain a laser safety program for your dental office.

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Marketing Strategies for the Dental Practice

April 5, 2019 | 10:30 AM - 11:30 AM

**Don’t Let Your Laser Collect Dust – Optimal Ways to Utilize and Market Your Laser (98)**

Nick Clausen, Founder & CEO, Dental Laser Coaching, Las Vegas, Nevada, USA

Too many time dental practices invest in laser technology and it goes underutilized. Why do some offices excel with their lasers and other offices “use laser occasionally” and even worse, others simply let the laser collect dust? Learn how to select the right cases, get case acceptance, and have the whole team on board with a coherent message that will lead your practice to optimal laser implementation success.

**Educational Objectives**

- Discover the laser cases that will be fastest to implement.
- Comprehend the importance of laser team communication that is required to achieve optimal success.
- Develop the proper marketing foundation to grow your practice to the maximum level.
Social Media Strategies that Drive ROI (13)

Corey Auger, BA, Crystal Clear Digital Marketing, Orlando, Florida, USA

In today’s digital era, one of the fastest growing trends is social media. However, there is a huge difference between practical social media and the social “hype.” There is also a crucial need to understand the difference between social media engagement and conversion – something that is often misunderstood in digital marketing efforts. For any modern dental practice, there is only one way to implement effective social media. Your practice needs to have a comprehensive strategy in place, but also needs to determine the consistency and frequency of your postings, how it relates to your business goals and what platforms you intend to engage with. Most importantly, if your social media strategy deems successful and brings prospects to your website, what systems do you have in place at the practice to convert that social media follower into a loyal, paying patient? This is the ultimate challenge and ultimate solution for enhancing your dental practice through social media.

Educational Objectives

• Compile a social media strategy that aligns with your practice’s business goals.
• Recognize the difference between engagement and conversion.
• Measure your practice’s ROI from social media outlets.
• Execute a social strategy that will build both community and patient opportunities.

Top Five Steps for Converting Online Opportunities into Loyal, Paying Patients (17)

Corey Auger, BA, Crystal Clear Digital Marketing, Orlando, Florida, USA

Before you can improve the aspect of any practice, there needs to be an understanding that nothing is, “good or bad” until it is effectively measured and compared. Success in the modern medical ecosystem is a function of a series of conversions and the ultimate conversion is determined by your staff, their processes, and the tools they choose to use. There are several factors that separate “average” and “great” dental practices. There must be strong leadership, a commitment to growth, effective marketing strategies in place, and a world-class service culture that is consistently kept throughout. Discover the five steps of online lead conversion and learn why your staff plays the most important role when converting a new opportunity into a long-term patient.

Educational Objectives

• Recognize the importance of uniform phone processes in your practice.
• Implement training strategies for your front desk staff.
• Demonstrate a consistent culture throughout the practice for increasing conversion ratios.
• Recognize why all steps in the conversion process are vital for growing your practice.
April 5, 2019 | 1:30 PM - 2:30 PM

Raving Patients: The Ultimate Social Proof (10)

Leonard F. Tau, DMD, PCDE, Palo Alto, California, USA

Word of mouth has always been the foundation for the acquisition of new patients by a dental practice but in our Internet age, word of mouth is transformed because of review sites like Google, Yelp, Facebook, Healthgrades, and dozens of others. You can now let your patients do the marketing for the practice. Practices must have a plan in place to establish, promote, manage, and monitor a positive reputation online. Positive reviews will drive business to your practice while negative reviews turn potential patients away. A bad customer experience which goes unresolved can lead to a bad reputation and thus lost revenue. Many dentists don’t know how to manage their reputation online. In this interactive, energized seminar, Dr. Tau shares numerous tips and best practices, as well as the system that has been tried and tested in his own office enabling him to take his practice to the next level simply by marketing his reputation.

Educational Objectives

• Know how social media fits into online reputation management.
• Learn software programs that help manage your reputation.
• Recognize why responding to negative reviews is not a good idea.
• Develop strategies for garnering positive patient reviews and review team training tips for garnering positive feedback.
Oral-Systemic Connection

April 4, 2019 | 10:45 AM - 11:15 AM

Frenectomy and the Systemic Connection (71)

Grace Sun, DDS, FAACD, MALD, MAGD, MICOI, Sun Dental Group, Los Angeles, California, USA

Laser dentistry has made the frenectomy safer and more comfortable – but there is so much more to explore beyond the procedure itself. This presentation will review systemically connected benefits afforded to pre-op and post-op frenectomy patients. Myofunctional activities and understanding the significance of the tongue and oral posture will be discussed.

Educational Objectives

• Summarize clinical assessment criteria for frenectomy patients.
• Review systemic connection benefits for frenectomy patients.
• Describe activities designed to optimize oral posture.

April 4, 2019 | 11:15 PM – 11:45 PM

Laser-Centric Periodontal Disease Diagnosis and Treatment Protocols that Improve Laser-Assisted Treatments, Mitigate the Risk of Heart Attacks and Strokes, and Reduce Antimicrobial Resistance (87)

James H. Hyland, DDS, BSc, By The Lake Dental, Toronto, Ontario, Canada

Seventy-five percent of patients have periodontal disease despite our best efforts. Laser care/surgery alone does not provide long-term, predictable oral/systemic health. Incorporating effective unique biofilm control techniques, bacterial testing to determine risk and to select the appropriate antibiotic and use of an antibiotic rinse and spit that targets the patient’s bacterial profile will enhance all laser therapies to reduce bleeding on probing and pocket depths by 80% in four weeks.

Educational Objectives

• Relate how the patient’s bacterial biofilm profile affects the oral and systemic risks and is key to controlling the pathogens causing the disease.
• Explain how to deliver antibiotics in a rinse and spit delivery system to kill the pathogens before, during, and after laser care to reduce infections and improve healing results.
• Gain insight into the different bacterial testing systems and how to select the most appropriate one.
• Implement new verbal skills that motivate and inspire patients to maintain a healthy biofilm. Implement two visual tests to demonstrate active disease or health to the patient and practitioner.
Periodontal Therapy as Part of Whole Body Health (38)
Laura D. Braswell, DDS, Buckhead Periodontics, Atlanta, Georgia, USA

The connection between oral health and systemic health has been recognized for over 100 years. Recent medical research has strengthened this connection and provided valid guidelines for treating not only teeth, but the “whole person.” Medical and dental research will be reviewed along with cases to demonstrate various illnesses that affect, and are affected by, dental conditions. Clinical tests will be reviewed that can help with the diagnosis and treatment of oral diseases. The role of inflammation will be showcased as its control is important for overall health and wellness. The use of lasers plays a major role in the treatment of oral inflammation to help guide our patients to optimal health.

Educational Objectives
- Specify how oral and systemic health are related.
- Summarize the role of inflammation in overall health.
- Ascertain how to incorporate this perspective into current therapies.
- Appreciate the role of lasers in the treatment of oral diseases.

Shining New Light on Neurodegeneration: Integrating Noninvasive Photobiomodulation and Neurofeedback Training to Treat and Prevent Neurodegeneration (122)
Marvin Berman, PhD, CBT, QuietMIND Foundation, Elkins Park, Pennsylvania, USA

This presentation will review the current literature on the use of near-infrared photobiomodulation (PBM) and brainwave biofeedback or neurofeedback (NFB) training in the treatment of neurodegenerative and neuropsychiatric conditions. An integrative treatment and prevention approach will be presented including research data for both PBM and NFB.

Educational Objectives
- Specify biochemical and neurophysiological effects of photobiomodulation.
- Recognize the differences in electroencephalogram (EEG) response to PBM and its synergistic potential when combined with neurofeedback.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
April 4, 2019 | 1:30 PM – 2:30 PM

Using Dental Lasers to Treat the Medically Compromised Patient (41)

Mel A. Burchman, DDS, Private Practice, Langhorne, Pennsylvania, USA

With medical and technological advances, people are living longer and contending with a wider variety of illnesses and diseases than ever before. As a result, the role of health care providers has never been more challenging. However, it is not just for our elderly that these techniques can be used; it’s our young patients also. These same medical and technological advances have also opened new doors for practitioners, particularly where laser dentistry is concerned. In this presentation participants will learn the ways in which lasers have made it possible to treat these patients in the dental office who would have previously required hospitalization to receive their dental care. The ability to successfully treat these patients with as little disruption to their lives as possible while also lowering treatment costs can make laser integration an invaluable asset to any office. Attendees will learn a variety of applications for the use of lasers in the treatment of medically compromised patients, including laser hemostasis, photobiomodulation, periodontal treatments, and removing boney protuberances without anesthesia. Discussion may include cases involving the following conditions: PBM abatement of Parkinson’s motion tremors thereby allowing for root canal therapy, extractions, and bridgework in the dental chair; PBM treatment of a patient with cicatrical pemphigoid that allowed him to wear his full upper denture, eat again, and decrease his drug-induced diabetes; PBM for oral mucositis; laser hemostasis for patients that can’t come off blood thinners, e.g., heart surgery 7 days prior, secondary myelodplastic anemia; techniques to soften a calcified canal and remove a broken post in the canal; using Er:YAG lasers to recontour a boney protuberance in a cancer patient; periodontal treatment of a severe lymphedema patient.

Educational Objectives

- Identify the needs of today’s medically compromised patients and the ways in which they can be treated with lasers.
- Review laser hemostasis techniques for patients with clotting problems.
- Understand how photobiomodulation can be used to treat oral mucositis, alleviate oral manifestations of autoimmune diseases, quell motion disorders, and relieve craniofacial pain.
- Learn minor surgical techniques for removing boney protuberances, treating periodontal disease, and open calcified pulpal canals.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
Lasers for Treating Sleep Disorders (53)

Kyoju Nakajima, DDS PhD, Ōarai Nakajima Dental Clinic, Ōarai-machi, Japan

Conventional treatments for obstructive sleep apnea syndrome (OSAS) have involved the use of oral or dental appliances that open the upper airway. Recently, a new Er:YAG laser-based method for the treatment of snoring and OSAS has been developed. But these cases have not reported on the laser’s effect on changes in reference values such as the apnea-hypopnea index (AHI) and partial pressure of oxygen (PO2). Our investigation attempted to measure reference values and determine how conventional nonsurgical treatment alone, 10,600-nm CO2 laser and 980-nm diode laser treatment alone, or both treatments together affected these values. And this time, we also tried Er:YAG laser and Nd:YAG laser treatment. The aim was to compare treatment using these different laser wavelengths. Materials and Methods: Eleven patients diagnosed with OSAS by a hospital department of sleep disorders were included in this study. Chief complaints included abnormal discomfort of tissues adjacent to the teeth and bruxism. Diagnosis and Treatment Plan: A definite diagnosis for OSAS was obtained by a simple examination. A sleep splint was fabricated with the use of a George Gauge for those patients found to have an occlusal abnormality. The use of a laser was explained to those patients selected for laser treatment and informed consent was obtained. Treatment: A 10,600-nm CO2 laser scanner (SmartXide, DEKA, Calenzano, Italy) was used to irradiate the nasopharynx and uvula of selected patients. A 980-nm diode laser (Alta, Dental Photonics, Walpole, Mass., USA) was used to treat the oral cavity under the tongue. Laser treatments occurred over the period of one month. An Er:YAG laser (Lightwalker, Fotona, Ljubljana, Slovenia, with a fractional NightLase® handpiece) was used to irradiate the nasopharynx and uvula. An Nd:YAG laser (Lightwalker, Fotona) was used to treat the oral cavity under the tongue. Results: All 16 patients achieved improved inspection values after treatment. One patient, evaluated with magnetic resonance imaging (MRI), showed an increase in airway space. In 5 of 8 patients with continuous positive airway pressure (CPAP) appliances, inspection values improved. CPAP patients using dental appliances showed better values. Patients with high body mass index (BMI) values were indicated for continued use of CPAP. These lasers provided the same effects for patients. Patients with severe bruxism (95%) were found to exhibit other disorders (including gastrointestinal and cardiovascular disorders and cancer). Conclusion: The key to the good results was rehabilitation and use of the sleep splint with laser treatment.

Educational Objectives

• Summarize the findings of a study examining the effects of laser treatment of obstructive sleep apnea syndrome (OSAS).
• Discuss the effect of fractional Er:YAG laser irradiation on OSAS.
Pediatric & Restorative Dentistry

April 5, 2019 | 10:30 AM - 12:00 PM

**All-Tissue Laser for the Pediatric Dentist: 9.3μm Isotropic Carbon Dioxide Laser (68)**

Lawrence Kotlow, DDS, Private Practice, Albany, New York, USA

Convergent Dental has developed the “perfect” laser. The isotropic all-tissue carbon dioxide laser allows a dentist to complete all pediatric dental procedures without the need for local anesthesia in the vast majority of both hard and soft tissue procedures. It is safe and effective for soft tissue treatment for newborn infants and adults. It has been said for years that no laser can do everything, however the Solea laser may just be that laser. This presentation will discuss treatment of all classes of restorative dentistry and more than 20 soft tissue procedures that the pediatric and general dentist can perform in his or her practice.

**Educational Objectives**

- Identify the advantages of the 9300-nm laser wavelength.
- Learn how to achieve anesthetic-free operative dentistry.
- Develop confidence to complete most soft tissue procedures rather than refer them out.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.

April 5, 2019 | 12:00 PM - 12:30 PM

**Enabling Anesthesia-Free Procedures and Changing Patient Perceptions of Going to the Dentist with a 9.3-Micron CO₂ All-Tissue Laser (81)**

Yooson Kim, DMD, Private Practice, Morgantown, Pennsylvania, USA

Patients dread going to the dentist because of anxiety over the needle, bleeding, pain, or the sound of the drill. This anxiety often forces them to postpone regular dental visits and neglect their oral health, which has substantive negative consequences for overall body health. By removing the pain points of dentistry, especially the use of anesthesia and the drill, measurable improvements can be made to reducing in-office fear and improving case acceptance. This multisite retrospective practice data review evaluates the effects of a 9.3-micron CO₂ all-tissue laser on enabling truly anesthesia-free hard and soft tissue procedures, changing patient perceptions of going to the dentist, reducing common patient fear points, and improving overall treatment success.

**Educational Objectives**

- Discuss how anesthesia-free dentistry can change patient perceptions of going to the dentist and improve case acceptance.
- Learn how to achieve truly anesthesia-free hard and soft tissue procedures with a 9.3-micron CO₂ all-tissue laser.
April 5, 2019 | 1:30 PM - 2:00 PM

Beyond Cutting with the 9.3-μm CO₂ Laser: Applications from Snoring, Peri-Implantitis to Caries (80)

Charles Kerbage, PhD, MBA, Convergent Dental, Needham, Massachusetts, USA

This presentation will demonstrate various applications of the 9.3-μm CO₂ all-tissue laser that can be used in noninvasive subablation regimes. One application is laser-assisted tissue management for tightening of the uvula, soft palate, and other tissues with specific laser beam scanning patterns to reduce various causes of snoring. Another application is using this laser in a subablation regime (~1 J/cm²) for caries prevention by increasing the acid resistance of the tooth by removing carbonate in dental enamel (~50%) without melting the surface. The peak absorption of this wavelength in enamel makes this laser the most logical choice. Both pH cycling and dissolution challenge demonstrate that laser-treated enamel and a combination of laser followed by fluoride application are more caries-resistant by a factor of 5 and 7, respectively. In addition, the presentation will cover radial firing capabilities for use in closed flap debridement and decontamination of titanium dental implants.

Educational Objectives

- Enumerate applications of the 9.3-μm CO₂ laser in subablative treatment regimes.
- Summarize how the 9.3-μm CO₂ laser can be used for caries prevention, snoring reduction, and peri-implantitis treatment.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
How Lasers Are a Clear and Concise Tool for Tethered Oral Tissue Releases (63)

Patricia M. Pine, RDH, COM, Muscles in Harmony, Fountain Hills, Arizona, USA

At birth, individuals undergo numerous physical changes. Cells continue to change throughout growth. The goal is normal, healthy growth. Identification of the physical effects of nonfunctional restricted frenums brings awareness to all professionals, both dental and nondental. Folds of mucous membranes of connective tissue are called frenums, or frenulums. These structures support or restrict the movement of the tongue. Tethered oral tissues (TOTs) prevent proper breast or bottle feeding, contributing to failure to thrive, poor oral and physical development, speech-communication difficulties, and impaired cleaning teeth with the tongue to prevent decay. Other concerns are digestion problems, full body tightness, sleep disturbances, and sleep apnea. Lasers can make a clear, concise contribution to treatment. Many dental and medical professionals have not had tethered oral tissue training. Educational curriculums have not evolved to include this topic at length. Professionals are discovering how the human body compensates for this tight tethered oral tissue. A qualified professional manually performs a simple screening to distinguish the difference between restricted and nonrestrictive membranes. The body compensates for restricted oral tissue in the mouth from head to toes, e.g., migraines, neck and shoulder pain, gut pain, etc.

TOTs not only cause physical problems, they also impact social and psychological development. Dental and medical communities are called to recognize the impact TOTs have on someone’s life. Once a diagnosis is made, corrective therapy can be easily initiated. The least invasive treatment is achieved using a dental CO₂ laser therapy called a frenectomy. It is a quick treatment that allows the restriction to be released without known complications. This therapy leads the way to a healthier mouth and body!

Awareness of, identifying, and a simple screening of TOTs will allow dentists and others to recognize problems, provide education and guidance on TOTs, and help patients develop normally and without oral constraints. Complete diagnosis and treatment using laser therapy will allow the human body to develop as it was meant to, thus preventing oral and physical health issues affecting one’s life.

Educational Objectives

• Identify restricted frenums that cause oral and physical health problems.
• Distinguish between nonrestricted frenum and restricted frenum.
• Specify different classifications of frenums.
• Discover a noninvasive laser release therapy that is simple and concise.
Pediatric Tethered Oral Tissues Symposium (TOTs)

April 6, 2019 | 8:30 AM - 10:00 AM

Lasers in the Pediatric Setting – TOTS (96)

Lawrence Kotlow, DDS, Private Practice, Albany, New York, USA

This presentation will give the attendees an overview of the mechanism of action of a 9300-nm CO₂ laser (Solea, Convergent Dental, Needham, Mass., USA) and how it is used for both hard and soft tissue procedures on the pediatric patient without the need for local anesthesia in the vast majority of cases.

Educational Objectives

• Specify the mechanism of action for the 9300-nm laser.
• Relate how to achieve anesthetic-free operative dentistry.
• Enumerate soft tissue procedures which can be completed using the 9300-nm laser.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.

April 6, 2019 | 10:30 AM - 12:00 PM

Functional Feeding: How IBCLCs Create Successful Infant Frenectomy Outcomes (88)

Jacqueline Kincer, IBCLC, COMS, Holistic Lactation, Phoenix, Arizona, USA

Too often parents are ill-prepared for their infant’s frenectomy procedure due to lack of intervention and support from an IBCLC. Infants begin sucking and swallowing early in the womb, and it takes time to integrate new physiological and neural logical changes that are made post-frenectomy. The procedure itself only creates the potential for proper feeding patterns, but does not create full function without further intervention. Since motor learning takes time, and suck training, management of milk supply, proper latching (and more) are all necessary components to functional feeding, IBCLCs play a special and essential role in connection with tethered oral tissue. Tethered oral tissues create a number of complications for the breastfeeding parent and baby that are complex and outside the scope of what a dentist can treat. An IBCLC is the clinician specifically trained in infant feeding at the breast and bottle, with special skills for habilitating oral function as it relates to breastfeeding. This presentation outlines why every dental practice should require seeing an IBCLC before and after frenectomy. For dentists performing a surgical procedure, it is beneficial to employ therapeutic strategies to ensure successful surgical outcomes and reduce the rate of complications.

Educational Objectives

• Relate how functional breastfeeding develops the infant’s airway and craniofacial structure.
• Understand the role of IBCLCs as part of the care team.
• Discover ways to incorporate IBCLCs into your practice, and how to find ones knowledgeable in TOTs.
April 6, 2019 | 1:30 PM - 2:30 PM

**CranioSacral Therapy for the Improvement of Recovery for Tongue- / Lip-Tie Revision (92)**

Ken Piercy, MTI, CST-D, Dallas, Texas, USA

CranioSacral Therapy addresses the soft tissues and osseous tissues of the body and head, including, but not limited to, facial bones, muscles, and attached connective tissues. For tongue-tie revisions, this therapy can reduce the amount of time the patient needs to recover from the procedures. This includes oral aversion, motor and function of the muscles, and innervation of the oral cavity. By calming the sensitivity of the oral muscles and nerves, CranioSacral Therapy can greatly reduce the time patients need to acclimate to the new available muscle functions, including tongue extension and suck/swallow. This can accelerate the recovery of the patient to allow acceptance of the process and recovery of feeding functions.

**Educational Objectives**

- Comprehend the importance of tongue- and lip-tie revision procedures are for the development of the newborn, baby or adolescent, and how it impacts every patient differently.
- Describe the procedure from the patient’s perspective, including its emotional impact.

April 6, 2019 | 2:30 PM – 3:30 PM

**Airway, Breathing and Children...Pay Attention to This Now! (54)**

Diana A. Batoon, DMD, Arizona Center for Breathing & Sleep Wellness, Scottsdale, Arizona, USA

Children in today’s society experience a myriad of signs and symptoms that contribute to sleep-related disordered breathing. As dental professionals, we can evaluate and screen for possible sleep issues. Dentistry is ever-changing and looking at airway needs to be a priority in all dental settings whether we are general dentists or specialists. Nasal breathing is the key, and incorporating screening for airway issues as well as the use of dental lasers can help treat issues like mouth-breathing or low tongue posture. If breathing is not correct, then sleeping architecture and craniofacial development is affected in more ways than one. Let’s take the time to pay more attention to this younger population of patients!

**Educational Objectives**

- Identify sleep-related disordered breathing symptoms.
- Evaluate and screen root causes of sleep-related disordered breathing.
- Incorporate the use of dental lasers for possible airway issues.
- Implement tools for sleep-related issues in children.
April 6, 2019 | 3:30 PM - 4:15 PM

Is Tongue-Tie the Root Cause of Childhood Chronic Disease? (65)

Saadia Mohammed, DDS, Palm Beach Pediatric Dentistry, Boca Raton, Florida, USA

‘Ten to twenty million children and adolescents in the United States have some form of chronic illness or disability. Chronic refers to a health condition that lasts anywhere from three months to a lifetime.’ Source: American Academy of Pediatrics.

Dental caries is the number-one childhood chronic disease. As laser dentists we are going to be treating these children. In the absence of typical factors which promote tooth decay it behooves us to look under the tongue. Use of the functional medicine matrix permits examination of common chronic childhood diseases of gastrointestinal and airway-sleep disorders with obvious linkages to ankyloglossia.

The International Affiliation of Tongue-tie Professionals (IATP) defines ankyloglossia as the embryological remnant of tissue which attaches the tongue to the floor of the mouth. In the presence of ankyloglossia which interferes or impacts normal function, we need to collaborate with the medical community and develop a simple protocol which is consistent and enables diagnosis of the aberrant anatomy and a plan for rehabilitation and restoration of optimal lingual function.

**Educational Objectives**

- Identify the relationship between chronic childhood disease and tongue-tie.
- Recognize that tongue-ties rarely exist in isolation, most tongue-ties are missed by the medical professionals and the manifestations of the tie are treated with increasing burden placed on both the patient and the health care system.
- Learn that a tongue-tie is easily corrected, but its diagnosis is commonly missed primarily due to lack of knowledge and training on the practitioner’s part.
Periodontology

April 4, 2019 | 1:30 PM - 2:00 PM

University-Based Clinical Trial to Evaluate Wellness Following Periodontal Therapy: Laser vs. Scalpel (101)

David Harris, MS, PhD1,2; Ranjitha Padhiar, DDS1; Mariam Khan, DDS1; Neha Agarwal, DDS1; John G. Sulewski, MA4; Andrew J. Sullivan, DDS1
1Rutgers School of Dental Medicine, Newark, New Jersey, USA
2California State University, Department of Biological Sciences, Chico, California, USA
3Bio-Medical Consultants & Associates, Inc., Oroville, California, USA
4Millennium Dental Technologies, Cerritos, California, USA

Periodontitis has been associated with several chronic systemic diseases and conditions. One would assume, then, that removing the periodontal disease should improve overall wellness in such patients. Jeffcoat et al. (2014) searched insurance provider records of 338,891 patients and found significant health care cost reductions and fewer hospitalizations in patients with type 2 diabetes, coronary artery disease, cerebral vascular disease, and pregnancy who had prior periodontal therapy versus those without periodontal therapy (PT).

A clinical trial is being conducted at the Department of Periodontics, Rutgers School of Dental Medicine, to measure changes in wellness following PT using a 36-item short form survey (“RAND-36”), a well-validated questionnaire that measures wellness. The study design and questionnaire details will be described. Attendees will be encouraged to use the RAND-36 in their own practices to monitor the health of their patients.

At Rutgers candidate PT patients are offered the option of the LANAP treatment (pulsed Nd:YAG laser, PerioLase MVP-7, Millennium Dental Technologies, Cerritos, Calif., USA) or conventional treatment. A sub-aim of the Rutgers clinical trial will be to compare changes in wellness between the cohort that receives the minimally invasive LANAP PT and a matched group that receives four-quadrant osseous surgery.


Educational Objectives

• Understand the experimental design for a questionnaire study.
• Describe the RAND-36 questionnaire to evaluate change in wellness following dental treatments.
• Consider using the RAND-36 questionnaire in your dental practice.
Peri-Implantitis Treated with the LAPIP™ Protocol: A Retrospective Analysis (125)

Gary M. Schwarz, DDS, MSD1; David M. Harris, PhD2

1Private Practice, McAllen, Texas, USA
2Department of Biological Sciences, California State University, Chico, California; Department of Periodontics, Rutgers School of Dental Medicine, Newark, New Jersey; Bio-Medical Consultants & Associates, Inc., Oroville, California, USA

Purpose: The intent of this study was to provide a retrospective analysis of clinical outcomes of 222 sequential patients with 437 implants with peri-implantitis treated with the LAPIP protocol (pulsed Nd:YAG laser, PerioLase MVP-7, Millennium Dental Technologies, Cerritos, Calif., USA).

Material and Methods: All LAPIP patients at this practice were included and no LAPIP patients were excluded. Primary outcome variable was probing depths (PD), secondary variables were redness, bleeding on probing, and pus. Significance of PD and clinical sign reductions were assessed using repeated measures analysis of variance. Other outcome measures were summarized descriptively with 95% confidence intervals.

Results: There were 116 patients with 224 treated implants having complete data for both baseline and follow-up visits. The percent of successful treatments, that is, patients with follow-up PD ≤ 4 mm and elimination of clinical signs, was 90%. Pocket Depth reduction from 5.4 mm at baseline reduced to 3.4 mm at 7.6 months was significant (P ≤ .001). Clinical sign reduction was also significant (P ≤ .001). In all patients with follow-up visits (138 patients with 264 implants) 15 implants were recorded as failed and 249 were intact at a median longest follow-up time of 13.1 months, a survival rate of 94%.

We have long-term follow-up data for 155 patients with 299 implants with peri-implantitis (median follow-up 24 months, range 1-63 months). One additional implant was lost at 30 months. 68% remain successful; 11% relapse at about 24 months; 16% have a partial positive response; and 5% have failed.

Conclusions: In our experience the minimally invasive LAPIP procedure for peri-implantitis has provided consistent, effective, and predictable positive clinical outcomes. Future controlled trials are indicated.

Educational Objectives

- Summarize the LAPIP protocol for treatment of peri-implantitis.
- Evaluate the radiographic evidence and clinical signs of successful treatment.
- Characterize the short- and long-term results of the protocol in a single private practice.
Photobiomodulation (PBM)

April 5, 2019 | 10:30 AM - 11:00 AM

Photobiomodulation in a General Dental Practice (103)

Arun Darbar, BDS, Private Practice, Smile Creations Dental Innovations, Leighton Buzzard, United Kingdom

Background: Dental lasers have been in existence since the late 1980s and evolved over time and today it is possible to provide laser dentistry covering most modalities in general and specialist dentistry from simple to complex aesthetic and restorative procedures for both soft and hard tissues. With the use of ‘low-level laser therapy’ and employing the principles of PhotoBioModulatiom (PBM), it is possible to reduce pain, produce enhanced healing and regeneration. Lasers have been used in our clinical dental practice for the past 25 years for dental procedures. Low-level laser therapy became a natural progression as the benefits to patients in combination with surgical and hard tissue applications were noted consistently. This has now been taken a step further and the use of laser therapy prior to treatment to prime the tissue before any treatment is provided using the concept of preconditioning. The purpose of this clinical presentation is to demonstrate how this concept has enhanced the patient experience. As clinicians we continue to strive to treat our patients with minimum discomfort and get predictable good-quality outcomes. As it has been shown that the concept of PBM therapy can affect the redox balance of the cell, we hypothesize that if we can change this balance favorably by preconditioning before any intervention, it is possible that we can promote even better quality healing and prepare the tissue to respond more favorably.

Educational Objectives

• Identify the uses of PBM therapy as demonstrated through clinical case studies.
• Discuss use of photobiomodulation in simple and complex clinical conditions.
• Review indications and contraindications of photobiomodulation as compared to conventional medications.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
April 5, 2019 | 11:00 AM - 11:30 AM

Opioid Crisis and Photobiomodulation: Nexus of Ethics and Research Advances (37)

Donald E. Patthoff, DDS, Private Practice, Martinsburg, West Virginia, USA

Dentistry has responded to the national opioid addiction on multiple levels: collaborations with pharmaceutical companies to control prescription patterns; education on different modes of pain management; identification of components of addictions; and encouraging inter-professional collaborations. This presentation will focus on two major interventions already available to dentists, though rarely if ever discussed or taught. The first is training in professional ethics to evaluate and utilize new research innovations in a safe and effective manner for patient care. Second, the use of recent innovation – Photobiomodulation therapy – a noninvasive and effective tool for chronic and acute pain management. This interactive presentation will also discuss how opioid abuse and dependence have become a national public health crisis. Although opioids have a role in controlling pain, its misuse is causing devastating results. From a professional standpoint, it is important to balance evidence-based-data with patterns of educational, public policy, and commercial patterns of practice, which is ultimately critical to patient care and societal health. Other pain management options must be explored. This seminar will describe the role that Photobiomodulation (PBM) is currently playing in reducing pain by offering a complementary component to pain and depression management. Finally, it uses this under-utilized clinical modality as an educational tool to help explore and understand why professional ethics organizational tools are also underutilized – compared to the more common politically and commercially driven modalities that continue to dominate the current cultural framework about our understandings of and interventions for all behavioral patterns – those desired and those needing adjustment. Designing and offering PBM modalities and applied professional ethics offers a way to challenge long-standing addictive behaviors in education, clinical practice, public policy, and culture. Learning to balance evidence-based data with patterns of educational, public policy, and commercial patterns of practice is ultimately critical to patient care and societal health.

Educational Objectives

• Discuss the appropriate diagnoses and treatment workflow of managing dental pain with various treatment options.
• Emphasize the role of a professional ethics tools to help evaluate the evidence that photobiomodulation (PBM) offers a complementary component to pain management.
• Relate a short introduction to PBM and applied professional ethics.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
Photobiomodulation as an Adjunct to Periodontal Therapy (74)

Shlomo Via, DMD, Center of Dental Medicine Sheba Medical Center Israel Defense Forces, Ramat Gan, Israel

The majority of patients treated in periodontist practices suffer from advanced periodontitis, peri-implantitis, or both. Since both diseases are inflammatory chronic infectious diseases, our goal is to eliminate the infection, minimize the inflammatory reaction, and consequently reduce the tissue damage. Photobiomodulation according to research uses low-power light energy to stimulate the body’s immune system and increase the energy in the living organ, thus allowing it to cope with stress and disease. Laser therapy is, to the best of our knowledge, the only therapy that treats the two facets of the disease, the infectious and the inflammatory. Integrating photobiostimulation within structured protocols helps to maximize the results of the therapy. In this presentation protocols for treatment of periodontitis and peri-implantitis that combines Photobiomodulation into the treatment will be presented with follow-up of up two years.

Educational Objectives

- Discuss combining photobiomodulation with conventional treatment protocols.
- Describe structured protocols for periodontal treatments.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.

Novel Approach for Photobiomodulation Therapy Using Smart Wound Dressings with Ruthenium Down-Converting Nanospheres (57)

Rodrigo C. Mosca, DDS, MSc, PhD; Nicholas Young, Academic Visitor; Monica Beatriz Mathor, Pharm B, MSc, PhD; Carlos Alberto Zeituni, PhD; Praveen Ravindra Arany, BDS, MDS, MMSC, PhD

1Energetic and Nuclear Research Institute (IPEN/CNEN - SP) - CTR - Radiation Technology Center University of São Paulo (USP), São Paulo, Brazil;
2University at Buffalo - School of Dental Medicine, Engineering & Applied Sciences, Buffalo, New York, USA;
3Energetic and Nuclear Research Institute (IPEN/CNEN-SP), Radiation Technology Center (CTR), São Paulo, Brazil

Background: Oral wounds are a prime problem for pain and discomfort. The prescription of analgesics, including opioids, has raised concern among current healthcare professionals. Methods to promote healing therefore will reduce and potentially eliminate these issues. Smart materials refers to the ability to sense and respond to an external stimulus, changing their status for a predetermined period that is reversible and repeatable. In this work, we used the [Ru(bipy) 3]2+ acetate-loaded down-converting nanospheres on 3-D full-thickness engineered tissues to assess the ability of Photobiomodulation (PBM) therapy to promote wound healing.
Material and Methods: [Ru(bipy)3]2+ acetate-loaded nanospheres were prepared by double emulsion technique using poly (lactic) glycolic acid and polyvinyl acetate. Fresh split-thickness skin grafts were obtained from a tissue bank and following incubation in 98% glycerol solution for 21 days at 4°C, the graft was disinfected by exposing tissue grafts to a 25 or 50 kGy radiation dose. Isolated cells were then counted and 150,000 cells/cm² of fibroblasts and keratinocytes were cultured. After 7 days, the dermal fragments with proliferating cells were elevated using metal grids (air-liquid) and the cells were kept exposed to the air for 14 more days (total 21 days). We used six groups as follows: Controls with grafts alone (Group 1), a grafts with [Ru(bipy)3]2+ acetate-loaded nanospheres (Group 2), and a study group where nanosphere application and treatment with a PBM device at 450 nm, 4 J/cm² (that emits at 660 nm) (Group 3). To address effects of discrete wavelengths directly, grafts were also treated with 450 nm (Group 4), 630 nm (Group 5), and both wavelengths (Group 6), all at 4 J/cm². The [Ru(bipy)3]2+ acetate-loaded nanospheres were dissolved (58 μg in 3600 μL of chloroform, Sigma) and the solution was added to each well (24-well plate) and allowed to evaporate overnight in a fume hood to create a thin layer at the bottom of the well. The graft viability was assessed using a spectrophotometer (LS-50B, Perkin-Elmer, Norwalk, Conn., USA) with absorbance and fluorescence (Excitation/Emission: 570/590 nm). All assays were performed in triplicates and read after 24 and 48 hours after the light irradiated. The mean and standard deviation for all fluorescence measurements were calculated and subsequently corrected for background and expressed as ‘relative fluorescence units’ (RFUs).

Results: After 48h, the light-activated smart bandage (Group 3) demonstrated significant (P<0.05) improvements in graft viability compared to control groups. Comparisons with other light treatment groups alone demonstrated the effectiveness of PBM treatment on graft viability. Further mechanistic validation of these pathways are currently ongoing.

Discussion and Conclusion: The viability and safety to using [Ru(bipy)3]2+acetate-loaded nanospheres as a wound dressing for photobiomodulation therapy offers an a novel approach to optimizing treatment delivery for wound healing or other skin diseases.

Educational Objectives
- Describe the role of smart compounds and down-converting nanospheres in wound dressings.
- Summarize the results of a study of a light-activated smart bandage in promoting wound healing.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
April 5, 2019 | 2:00 PM - 2:30 PM

The Oral Microbiome/Holobiont: Importance in the Photobiomodulation Treatment of Cardiac and Neurodegenerative Disease (56)

Ann Liebert, PhD; Brian Bicknell, PhD
'Australasian Research Institute, Wahroonga, Australia

There has been a substantial increase in the understanding of the importance of the gut microbiome in the diseases of aging, including chronic pain, cardiac disease, postoperative cognitive dysfunction, neurodegenerative diseases, Alzheimer’s and Parkinson’s diseases, motor neuron disease, multiple sclerosis, as well as sleep disorders and gastrointestinal disorders. There is also strong evidence that the oral microbiome, in particular Porphyromonas gingivalis as well as having an influence on periodontal disease, is implicated in atherosclerosis, Alzheimer’s disease, and more recently Parkinson’s disease. The impact of photobiomodulation in modulating inflammatory markers when administered remotely has been demonstrated (neuroprotective abscopal effect). This has been shown in a cardiac model, where distal PBM application to the tibia was more effective than local application to the heart. In our laboratory, we have shown that PBM administered to the gut has increased the numbers of beneficial bacteria in a manner reminiscent of treatment with Metformin. This effect was delayed by up to 14 days after first PBM administration, which suggests a systemic effect, indicating that the microbiome is influencing the host genome (the holobiome). If this observed effect can help explain the systemic or tertiary effects of PBM, this principle might be used to treat the oral microbiome and thus improve the microbiome-brain and microbiome-heart axes and affect the treatment of heart disease and Alzheimer’s disease. There is evidence that the oral microbiome is altered in migraine sufferers who demonstrate more nitrates in the mouth and, interestingly, migraine is associated with increased risk for heart and Parkinson’s diseases. There is a great potential for dentists to intervene in oral health to prevent or modify some of the diseases of aging. Results from some of the experiments and clinical trials being conducted in our laboratory will be presented.

Educational Objectives

• Discuss the importance of the microbiome.
• Enumerate the mechanisms of photobiomodulation as they may relate to treatment of cardiac and neurodegenerative disease.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
Exploring the Use of a 405-nm Diode Laser as a New Diagnostic Tool in Dentistry

Aneta Olszewska, PhD¹; Marta Maciak, PhD²

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Objectives: Correct diagnosis is essential for accurate dental treatment. Traditional methods often lack sensitivity. Research has demonstrated that conventional methods and techniques are inaccurate. The use of a 405-nm laser allows identifying changes in hard and soft oral tissues by observing the fluorescence in response to light excitation.

Aim: The aim of this study is to present applications of a 405-nm diode laser in dental diagnostics.

Materials and Methods: A 450-nm diode laser (Smart M Pro, Lasotronix, Piaseczno, Poland) was used on orthodontic pediatric and adult patients for (1) evaluating the amount of dental plaque remaining around brackets, (2) caries management, especially with deep caries to control the infection in partial caries removal, (3) caries detection in very early stages in fissures and between the surfaces of molar teeth, (4) assessing cracks and fracture lines in post-traumatic cases, (5) identifying deposits of dental plaque or dental calculus in subgingival areas in adults with periodontitis, (6) detecting infection within root canals during endodontic treatment, and (7) visualizing precancerous lesions of the oral mucosa.

Results: In orthodontic and periodontal patients, a 405-nm diode laser was found to be a handy tool in oral hygiene education. Making dental biofilm easily visible with laser light encourages patient improvements in dental hygiene habits. On follow-up, there is no risk of staining caused by a disclosing solution, thus making the laser visualization method safe for a patient and easy for a hygienist.

In permanent teeth with undeveloped roots, when the primary goal is to control infection in a deep cavity to maintain a vital pulp crucial for apexogenesis, a 405-nm diode laser was used to visualize the area of dentin with a high amount of bacteria. Partial removal of infected dentin and placement of biomimetic, remineralizing materials leads to continuing root development.

Demineralization due to caries attack leads to loss of Ca ions, and this condition is diagnosed with a 405-nm diode laser as a reduced fluorescence, an indication of the presence of early stages of erosion, subsurface porosity, or carious lesions. Once identified, these conditions could be arrested or reversed with remineralizing therapies. The 405-nm diode laser is also used in endodontic treatment for detection of bacteria in the pulp chamber and root canals.

Fluorescence has been shown in clinical practice as a useful method to help differentiate normal healthy tissue from premalignant and malignant lesions in the oral cavity and in identifying the appropriate margin of surgical resection.

Conclusions: The 405-nm diode laser is a safe and easy technique to evaluate bacterial accumulation in dental plaque, calculus, cavities, and root canals. In diagnostics of a mucosal lesion, use of the 450-nm diode laser is a simple, time-efficient prophylaxis procedure. In diagnostics and monitoring of early demineralization or developmental hypomineralization lesions, the 405-nm diode laser is a valuable method for evaluation of remineralization therapy effects.

Learning Objectives:

• Review diagnostics and evaluation of mucosal lesions using a 450-nm diode laser.
• Characterize the usefulness of diagnostics and monitoring of hypomineralization and demineralization using a 450-nm diode laser.
• Appreciate the ability of a 450-nm diode laser in diagnostics of bacterial accumulation in dental plaque, calculus, cavities, and root canals

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
Technology

April 4, 2019 | 1:30 PM - 2:30 PM

Cone Beam Technology for Dental Practice (99)

Keith Brewster, DDS, FALD, Private Practice, Dallas, Texas, USA

Cone beam radiology can be used in the dental practice to facilitate diagnosis, treatment planning, and determination of treatment options. This presentation will include case descriptions and patient scans that demonstrate the capabilities and versatility of cone beam technology in treatment planning for cases ranging from simple to complex multiple implant surgeries. Also planned is a discussion of how the cone beam can be used for guided anterior implant placement, tissue guidance, and supernumerary extractions.

Educational Objectives

• Specify how cone beam technology can be used beneficially in the dental practice.
• Describe diagnosing, treatment planning, and patient outcomes of treatment using 3-D technology.
• Review cases used for demonstration with 3-D software working in real time.
**Workshops**

The 2019 Annual Conference includes 9 Workshops that are designed to allow participants to acquire didactic information and an opportunity to actually try a new method or device in an educational setting before either buying it or using it on a patient. Workshops have limited attendance.

**Workshop: Periodontology**

April 6, 2019 | 8:30 AM - 11:30 AM

**Closed Flap Laser Periodontal Surgery: A Workshop (97)**

Samuel Low, DDS, MS, MEd, University of Florida, Palm Coast, Florida, USA

Periodontitis results in decreased attachment and eventual loss of the dentition. While traditional methodologies such as flap and osseous procedures have resulted in success, their acceptance by the lay public has been marginal. Various dental laser wavelengths utilized to manage periodontitis have demonstrated clinical success with positive patient-related outcomes and a concomitant decrease in recession. To attain success, a minimally invasive laser procedure must adhere in detail to the principles of wound healing. This workshop will identify each step and create in a workbook format the details of a closed flap laser procedure from de-epithelialization to degranulation and decortication. Each participant will perform a closed flap procedure to the level of competency. Nonlaser components will include microthin ultrasonics and innovative glycine air systems. Adjunctive steps and indications will be introduced including osseous grafting and biologic mediators to enhance regeneration. Postoperative management systems will be developed with reevaluation protocols to determine success. Case presentation and marketing will be explored along with third-party coding.

**Educational Objectives**

- Comprehend progressive periodontal pathology and the role of inflammation and how to manipulate wound healing.
- Develop in a stepwise fashion a comprehensive closed flap laser periodontal procedure resulting in decreased pocket depth and minimal recession.
- Create positive patient management from case presentation to marketing and postoperative care.
**Workshop: Diode Lasers for Beginners**

**April 6, 2019 | 8:30 AM - 11:30 AM**

**Diode Lasers for Dentists – Basic Applications (69)**

John J. Graeber, DMD, MAGD, FICD, Morristown Memorial Hospital, East Hanover, New Jersey, USA

A diode laser can replace most conventional techniques utilized to manage soft tissue in the oral cavity. However, these laser devices are not utilized with the same techniques as scalpels, knives, noncontact lasers, and sulcular retraction cords. Unique diode laser techniques are taught and practiced in this workshop. Simulated in vitro exercises will simulate the most common soft tissue surgical and manipulative procedures. All procedures taught are shown in microscopic videography. Among the procedures taught are impression troughing, laser antibacterial pocket debridement, gingivectomy/gingivoplasty, incisional and excisional pontic site development, sulcular and vertical incisions, frenectomy, transmucosal implant placement. A review of basic contact laser techniques and laser safety is included.

**Educational Objectives**

- Practice basic contact laser cutting techniques.
- Achieve ideal tissue-laser interactions in vitro.
- Consider the advantages of excision vs. ablation techniques.

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**Workshop: Diode Lasers for Advanced Applications**

**April 6, 2019 | 1:30 PM - 4:30 PM**

**Diode Lasers for Dentists – Advanced Applications (70)**

John J. Graeber, DMD, MAGD, FICD, Morristown Memorial Hospital, Morristown, New Jersey, USA

This workshop is designed for dentists who have had basic training in diode laser techniques and now wish to expand their knowledge and performance of more difficult cases. An introductory presentation will describe proper photoinitiation techniques, efficient use of power/pulsing choices, proper angulation of tip to tissue, efficiency of stroke length and touch forces.

The procedures taught will be viewed on microvideos prior to the practical session. Among the procedures practiced will be biopsy, lingual frenectomy, venous lake ablation, hemangioma removal, epulis excision, vestibuloplasty, laser welding, incisions for flaps, transmucosal implant placement, emergence profile creation, transseptal fiberotomy and apicoectomy. All of the procedures can be accomplished utilizing any diode laser device.

**Educational Objectives**

- Perform advanced oral surgical procedures using a diode laser.
- Specify how a diode laser can replace surgical blades.
- Appreciate how a diode laser can perform any soft tissue laser procedure.
Workshop: Facial Aesthetics

April 6, 2019 | 1:30 PM - 4:30 PM

Laser Facial Aesthetics: Techniques You Can Learn and Bring into Your Practice (104)

Larry Lieberman, DDS1; Terry Alford, DDS2
1Private Practice, Brandenton, Florida, USA; 2Private Practice, Brandenton, Florida, USA

There are many techniques that dentists can incorporate into their practice which will open up an entire new aspect of dentistry for both the doctor and the patient. The attendee will learn several laser procedures such as facial peel, plump lips, facial rejuvenation, telangiectasia-spider veins, age spots, Botox and fillers, and more. We will demonstrate these techniques, show videos of them, and attendees may perform these techniques on each other. We will also demonstrate the NiteLase® technique for treating sleep apnea.

Educational Objectives

- Enumerate some of ways to provide facial rejuvenation.
- Identify ways that lasers can be used in a cosmetic dental practice.
- Discuss how you can expand your dental practice by giving patients what they want and increasing your revenue flow.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.

Workshop: Hygiene for Beginners

April 6, 2019 | 8:30 AM - 11:30 AM

Give ‘Em a Hand: Hygiene Hands-On (95)

Jeanette Miranda, RDH1; Heather Angers, RDH2; Gloria Monzon, RDH3; Shannon Richkowski, RDH4; Mary Lynn Smith, RDH5; Angie Wallace, RDH6
1Private Practice, Sioux Falls, South Dakota, USA; 2Private Practice, Lakewood, Colorado, USA; 3Private Practice, Milpitas, California, USA; 4Private Practice, McPherson, Kansas, USA; 5Private Practice, Owasso, Oklahoma, USA

This hands-on workshop will allow hygienists the opportunity to try a variety of soft-tissue lasers (diode, CO2, erbium), spend time working on techniques (laser-assisted periodontal therapy, laser bacterial reduction, photobiomodulation), and be able to get answers to their questions from experienced laser hygienists.

Educational Objectives

- Utilize a variety of soft tissue lasers on tissue specimens in a laboratory setting under controlled supervision for procedures typically performed in the hygiene department.
- Compare clinical techniques and tips with fellow hygienists.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
**Workshop: Hygiene for Advanced Applications**

April 6, 2019 | 1:30 PM - 4:30 PM

**Laser Safety Around Implants Workshop (46)**

Heather Angers, RDH, Belmar Park Dental Care, PC, Lakewood, Colorado, USA

Lasers are utilized for many applications in dental hygiene, one of which is the use of lasers around dental implants. This workshop will show advanced applications for safe use of lasers around implants.

**Educational Objectives**

- Review basic laser safety and safety around implants, i.e., tip angulation, irradiation duration, and power levels.
- Utilize pig jaws with implants inserted in order to help clinicians understand the angulation.
- Practice instrumentation of pockets around implants.

**Workshop: Implantitis – Treating Surgical Complications**

April 4, 2019 | 1:30 PM - 4:30 PM

**Use of Light Energy to Treat Surgical Complications (94)**

Ed Kusek, DDS, Private Practice, Sioux Falls, South Dakota, USA

This didactic and hands-on course will discuss use of diode, erbium, 1,060-nm CO₂ and 9,300-nm CO₂ lasers on how to treat flap preparations, peri-implantitis, and infected sites for apico and osteotomy sites; uncover implants; perform tissue grafting, ovate pontic formation, crown lengthening for osseous and soft tissue, and many more procedures. Each participant will have opportunity to work on pig jaws to simulate the human dentition.

**Educational Objectives**

- Comprehend how diode, erbium, and 1,060-nm 9,300-nm CO₂ lasers can be used to treat flap preparations, peri-implantitis, and infected sites for apico and osteotomy sites; uncover implants; and perform tissue grafting, ovate pontic formation, crown lengthening for osseous and soft tissue, and to aid in faster healing compared to traditional methods.
- Learn hard and soft tissue laser applications.
Workshop: Pediatric & Restorative Dentistry

April 5, 2019 | 3:30 PM - 5:00 PM

Clinical Applications with the 9.3-μm CO₂ Laser Wavelength (114)

Lawrence Kotlow, DDS, Private Practice, Albany, New York, USA

This presentation will give the attendees an overview of the mechanism of action of the 9,300-nm CO₂ laser and how it is used for both hard and soft tissue procedures on the pediatric patient without the need for local anesthesia in the vast majority of patients.

Educational Objectives

- Relate the mechanism of action for the 9,300-nm CO₂ laser in dentistry.
- Describe how to achieve anesthetic-free operative dentistry.
- Specify soft tissue procedures which can be completed using the 9,300-nm CO₂ laser.

Workshop: Photobiomodulation (PBM)

April 6, 2019 | 1:30 PM - 4:30 PM

Photobiomodulation Workshop (9)

Gerald Ross, DDS¹; Arun Darbar, DDS²; Mel A. Burchman, DDS³

¹Private practice, Tottenham, Ontario, Canada; ²Private Practice, Leighton Buzzard, United Kingdom; ³Private Practice, Langhorne, Pennsylvania, USA

This workshop will be given by experienced photobiomodulation clinicians and is intended to illustrate the clinical conditions that can be treated with the various devices which will be illustrated and can be tried by the participants. In addition there will be time for questions as participants will be divided into small groups and will rotate around the room. The goal of the workshop is to allow experienced users to expand and improve their use of photobiomodulation and for new users to be able learn how this technology can have many applications in their dental practice.

Educational Objectives

- Elaborate how photobiomodulation can be used in dentistry.
- Practice photobiomodulation techniques and improve skills using different devices.
- Apply the concepts and techniques you have learned in this workshop.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified clinical indications, or describes off-label uses.
**Tuesday, April 2, 2019 - Pre-Conference**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event – Room Location</th>
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<tbody>
<tr>
<td>5:30 pm–6:30 pm</td>
<td>Certification and Conference Meetings GRANITE BOARDROOM</td>
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<tr>
<td>6:30 pm–8:00 pm</td>
<td>Certification and Conference Meetings GRANITE BOARDROOM</td>
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<tr>
<td>7:00 am–8:00 am</td>
<td>ALD Office &amp; Workrooms SUNFLOWER &amp; COTTON</td>
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<tr>
<td>7:00 pm–7:30 pm</td>
<td>President’s Appreciation Reception for Board, Chairs, and Volunteers LOBBY LOUNGE</td>
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<tr>
<td>7:30 pm–8:30 pm</td>
<td>International Reception – International Attendees Welcome (by invitation) CARSU PATIO</td>
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<tr>
<td>4:00 pm–5:00 pm</td>
<td>Speaker Check-in with AV tech available GRANITE BOARDROOM</td>
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<tr>
<td>5:00 pm–7:00 pm</td>
<td>Speaker Check-in GRANITE BOARDROOM</td>
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**Wednesday, April 3, 2019 - Pre-Conference**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event – Room Location</th>
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<tbody>
<tr>
<td>7:00 am–12:00 pm</td>
<td>ALD Board of Directors Meeting BLUESTEM 3</td>
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<tr>
<td>10:00 am–6:00 pm</td>
<td>ALD Advanced Prosthodontists Clinical Case Studies – Part 3 BLUESTEM 3</td>
</tr>
<tr>
<td>12:00 pm–1:30 pm</td>
<td>lunch Advanced Prosthodontists Certification, Board of Directors</td>
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<tr>
<td>1:00 pm–5:00 pm</td>
<td>Speaker Check-in in GRANITE BOARDROOM</td>
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<tr>
<td>8:00 am–5:00 pm</td>
<td>ALD Photomedicine Pre-Conference (Advance Registration Required) BLUESTEM 3</td>
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<tr>
<td>7:00 am–12:00 pm</td>
<td>Setup Registration PRAIRIE FOREVER</td>
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<tr>
<td>7:00 am–8:00 pm</td>
<td>ALD Office &amp; Workrooms SUNFLOWER &amp; COTTON</td>
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**Continued...**
### Thursday, April 4, 2019

#### 7:00 am – 4:00 pm
- **Speaker Check-in**
  - GRANITE BOARDROOM and PRAIRIE ABC

#### 7:00 am – 8:00 am
- **Continental Breakfast**
  - PRAIRIE FOYER

#### 7:00 am – 4:00 pm
- **Registration Open**
  - PRAIRIE FOYER

#### 8:00 am – 9:00 am
- **Spouse Guest Continental Breakfast**
  - PRAIRIE FOYER

#### 12:30 pm – 5:00 pm
- **Exhibits Open**
  - PRAIRIE DEF

#### 6:00 pm – 7:00 pm
- **Lunch Break in Exhibit Hall**
  - PRAIRIE C

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**General Session “Lighting the Way Towards a Healthier Mouth and Body”**

**PRAIRIE ABC**

#### 8:00 am – 10:45 am
- **Welcome Remarks**
  - Mel Burchman, DDS and Gerald Ross, DDS

#### 8:15 am – 9:15 am
- **Keynote: Assume Your Role as an Oral-Systemic Specialist - The Science and Practice of Oral Systemic Care**
  - Charles Whitney, MD

#### 10:15 am – 11:15 am
- **Keynote: A Healthy Body Starts with a Healthy Mouth, How Oral Care Probiotics Enhance the Success of Laser Dentistry**
  - Martin Handfield, MSc, PhD

#### 11:45 am – 12:15 pm
- **Periodontal Therapy as Part of Whole-Body Health**
  - Marvin Berman, PhD, CBT

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**Dental Hygiene BLUESTEM 3**

#### 10:45 am – 11:15 am
- **Frenectomy and the Systemic Connection**
  - Grace Sun, DDS

#### 11:15 am – 11:45 am
- **Laser-Centric Periodontal Disease Diagnosis and Treatment Protocols that Improve Laser-Assisted Treatments to Mitigate the Risk of Heart Attacks and Strokes and Reduce Antimicrobial Resistance**
  - James Hyland, DDS

#### 12:15 pm – 12:45 pm
- **Periodontal Therapy**
  - Kyoju Nakajima, DDS, PhD

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**Dental Lasers PRAIRIE C**

#### 10:45 am – 11:15 am
- **The Diode Laser for a Comprehensive Wellness Program**
  - Camille Luke, RDH, MSDH

#### 11:15 am – 11:45 am
- **Laser Safety Around Implants**
  - Heather Angers, RDH

#### 11:45 am – 12:15 pm
- **Periodontal Endoscopy and Laser Bacterial Reduction**
  - Mary Lynn Smith, RDH

#### 12:15 pm – 12:45 pm
- **Periodontal Endoscopy as Part of Whole-Body Health**
  - Mary Lynn Smith, RDH

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**Oral-Systemic Connection PRAIRIE AB**

#### 10:45 am – 11:15 am
- **Bone Regeneration Using a Diode Laser**
  - Laura Braswell, DDS

#### 11:15 am – 12:15 pm
- **Treatment with 980-nm Diode Laser: Assessment of Different Tips During Tissue Initiation**
  - Kyoju Nakajima, DDS, PhD

#### 12:15 pm – 12:45 pm
- **Problems with Diode Laser in Implant Therapy**
  - Mary Lynn Smith, RDH

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**Academy of Laser Dentistry**

**www.laserdentistry.org**

- Dentistry’s Laser Meeting
As of March 13, 2019 – Schedule Subject to Changes

**Oral-Systemic Connection**

**PRAIRIE A**

- **Technology**

**BLUESTEM 3**

1:30 pm – 2:30 pm
Mel Burchman, DDS
Using Lasers to Treat Medically Compromised Patients (41)

2:30 pm – 3:00 pm
Kyoju Nakajima, DDS, PhD
Lasers for Treating Sleep Disorders (53)

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**PRAIRIE B**

1:30 pm – 2:30 pm
Keith Brewster, DDS
Cone Beam Technology in Dental Practice (99)

1:30 pm – 2:00 pm
David Harris, MS, PhD
University-Based Clinical Trial to Evaluate Wellness Following Periodontal Therapy: Laser vs. Scalpel (101)

2:00 pm – 2:30 pm
Gary M. Schwarz, DDS, MSD
Peri-Implantitis Treated with the LAPIP™ Protocol: A Retrospective Analysis (125)

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**Posters**

**BLUESTEM 3**

2:30 pm – 2:40 pm
Aneta Olszewska, PhD, Marta Maciak, PhD
Exploring the Use of a 405-nm Diode Laser as a New Diagnostic Tool in Dentistry (124)

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**New Trends, Technologies and Technology Session – Presentations by ALD Sponsors**

3:00 pm – 3:15 pm
Dr. Eugene Seidner Student Scholarship Presentation
Yujin Ohsugi, DDS, Tokyo Medical and Dental University
Comprehensive Analysis of Gene Expression Related to Healing After Bone Ablation with Er:YAG Laser (109)

3:15 pm – 3:25 pm
Dr. Eugene Seidner Research Presentation - Cozy Ruan, University of Tennessee College of Dentistry
Immunomodulatory Activity Seen as a Result of Photobiomodulation Therapy in Stimulated Primary Periodontal Ligament Fibroblasts (126)

3:25 pm – 3:35 pm
Dr. Eugene Seidner Research Presentation - Juliana Valk, University of Tennessee Health Science Center
Detailed Study of Root Surface Preparation Compounding Various Modalities of Traditional vs. Er:Cr:YSGG Laser Treatment Protocols (127)

3:35 pm – 3:50 pm
Dr. Eugene Seidner Research Presentation - Mary Yum Smith, RDH, McPherson College, McPherson, Kansas
The Efficiency of Preprocedural Laser Ablation on Periodontal Receptors in the Presence of a New Er:YAG Laser Technology (123)

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**Antimicrobials**

3:35 pm – 3:55 pm
Dr. Eugene Seidner Student Scholarship Presentation
Ana Triliouris, DDS, Chair
Comprehensive Analysis of Gene Expression Related to Healing After Bone Ablation with Er:YAG Laser (109)

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**New Trends, Technologies and Technology Session – Presentations by ALD Gold Sponsors**

3:45 pm – 4:30 pm
ProBiora Health LLC
Exhibits Booth 209

3:45 pm – 4:40 pm
Legally Mine
Exhibits Booth 105

3:45 pm – 4:50 pm
Perio Protect LLC
Exhibits Booth 316

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**Afternoon Snacks**

Happy Hour Hosted by Exhibitors Exhibit Hall – Everyone Welcome PRAIRIE BC
Heartland Dental Affiliation Open – Everyone Welcome PRAIRIE DEF

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**Advance Registration Required**

Teeth Whitening Workshop using Light Energy to Enhance Results
1:30 pm – 2:40 pm

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**Bluestem 3**

1:30 pm – 2:30 pm
Dr. Maria Magda, PhD
A New Approach to Laser Therapy: Laser-Evoked Transcranial Magnetic Stimulation (L-24)

2:00 pm – 2:40 pm
Dr. William Meitz, MS, PhD
Examination of the Lung Using a Laser-Diode in Sleep Apnea Therapy (24)

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**Bluestem A**

1:30 pm – 2:30 pm
Marina Roman, PhD
Oral Coagulation with Laser – An Update on New Indications for Laser Use in Oral Care (23)

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**Bluestem B**

1:30 pm – 2:30 pm
Dr. Karen Vanecek, PhD
Laser-Assisted periodontal therapy: An Update (25)

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**Bluestem C**

1:30 pm – 2:30 pm
Dr. Mary Lynn Smith, RDH, McPherson College, McPherson, Kansas
The Efficacy of Preprocedural Laser Bacterial Reduction (129)

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**Bluestem D**

1:30 pm – 2:30 pm
Dr. Eugene Seidner Research Presentation - Cozy Ruan, University of Tennessee College of Dentistry
Immunomodulatory Activity Seen as a Result of Photobiomodulation Therapy in Stimulated Primary Periodontal Ligament Fibroblasts (126)

1:30 pm – 2:30 pm
Dr. Eugene Seidner Research Presentation - Juliana Valk, University of Tennessee Health Science Center
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1:30 pm – 2:30 pm
Dr. Eugene Seidner Research Presentation - Mary Yum Smith, RDH, McPherson College, McPherson, Kansas
The Efficiency of Preprocedural Laser Ablation on Periodontal Receptors in the Presence of a New Er:YAG Laser Technology (123)

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**Bluestem E**

1:30 pm – 2:30 pm
Dr. Eugene Seidner Research Presentation - Cozy Ruan, University of Tennessee College of Dentistry
Immunomodulatory Activity Seen as a Result of Photobiomodulation Therapy in Stimulated Primary Periodontal Ligament Fibroblasts (126)

1:30 pm – 2:30 pm
Dr. Eugene Seidner Research Presentation - Juliana Valk, University of Tennessee Health Science Center
Detailed Study of Root Surface Preparation Compounding Various Modalities of Traditional vs. Er:Cr:YSGG Laser Treatment Protocols (127)

1:30 pm – 2:30 pm
Dr. Eugene Seidner Research Presentation - Mary Yum Smith, RDH, McPherson College, McPherson, Kansas
The Efficiency of Preprocedural Laser Ablation on Periodontal Receptors in the Presence of a New Er:YAG Laser Technology (123)

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**Bluestem F**

1:30 pm – 2:30 pm
Dr. Eugene Seidner Research Presentation - Cozy Ruan, University of Tennessee College of Dentistry
Immunomodulatory Activity Seen as a Result of Photobiomodulation Therapy in Stimulated Primary Periodontal Ligament Fibroblasts (126)

1:30 pm – 2:30 pm
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1:30 pm – 2:30 pm
Dr. Eugene Seidner Research Presentation - Mary Yum Smith, RDH, McPherson College, McPherson, Kansas
The Efficiency of Preprocedural Laser Ablation on Periodontal Receptors in the Presence of a New Er:YAG Laser Technology (123)
### Schedule of Events: Friday, April 5, 2019

**7:00 am – 5:00 pm**
- **Speaker Check-in** (Granite Boardroom and Prairie ABC)
- **Continental Breakfast** in Exhibit Hall (Prairie DEF)
- **Registration Open** (Prairie Foyer)
- **Exhibits Open** (Prairie DEF)
- **Silent Auction** to benefit Dr. Eugene Seidner Student Scholarship and Research Grants. Bid High, Bid Often! – Last Bid 12:59 pm Friday

**8:00 am – 9:00 am**
- **Spouse Guest Continental Breakfast** in Exhibition Hall (Prairie DEF)

**9:00 am – 10:00 am**
- **General Session**
  - “Lighting the Way Towards a Healthier Mouth and Body”
  - Andrew Mester, MD: Invention of Laser Biomodulation (105)
  - Lew Lim, PhD, MBA: Improving Brain Functions with Transcranial Photobiomodulation (106)
  - Jeri-Anne Lyons, PhD: Biological Effects of Photobiomodulation: How PBM works (26)

**10:00 am – 10:30 am**
- **Morning Break** in Exhibit Hall (Prairie DEF)

**10:30 am – 11:00 am**
- **Photobiomodulation in a General Dental Practice (103)**
  - Arun Darbar, BDS: Photobiomodulation in a General Dental Practice (103)

**11:00 am – 11:30 am**
- **Opioid Crisis and Photobiomodulation: Nexus of Ethics and Research Advances (37)**
  - Donald Patthoff, DDS: Opioid Crisis and Photobiomodulation: Nexus of Ethics and Research Advances (37)

**11:30 am – 12:00 pm**
- **Photobiomodulation as an Adjunct to Periodontal Therapy**
  - Shlomo Via, DMD: Photobiomodulation as an Adjunct to Periodontal Therapy

**12:00 pm – 12:30 pm**
- **Panel Discussion, James Carroll, Moderator**

**10:30 am – 12:00 pm**
- **Marketing Strategies for the Dental Practice**
  - Nick Clausen, MBA: Don’t Let Your Laser Collect Dust - Optimal Ways to Utilize and Market Your Laser (98)
  - Corey Auger, BA: Social Media Strategies that Drive ROI (13)
  - Corey Auger, BA: Top 5 Steps for Converting Online Opportunities into Loyalty (10)

**12:00 pm – 12:30 pm**
- **Top 5 Steps for Converting Online Opportunities into Loyalty**
  - Lawrence Kotlow, DDS: All-Tissue Laser for the Pediatric Dentist: 9.3μm Isotropic Carbon Dioxide Laser (68)
  - Yooson Kim, DDS: Enabling Anesthesia-Free Procedures and Changing Patient Perceptions of Going to the Dentist with a 9.3μm All-Tissue Laser for the Pediatric Dentist: 9.3μm Isotropic Carbon Dioxide Laser (68)

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  - Lew Lim, PhD, MBA: Improving Brain Functions with Transcranial Photobiomodulation (106)
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  - Yooson Kim, DDS: Enabling Anesthesia-Free Procedures and Changing Patient Perceptions of Going to the Dentist with a 9.3μm All-Tissue Laser for the Pediatric Dentist: 9.3μm Isotropic Carbon Dioxide Laser (68)

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  - Nick Clausen, MBA: Don’t Let Your Laser Collect Dust - Optimal Ways to Utilize and Market Your Laser (98)
  - Corey Auger, BA: Social Media Strategies that Drive ROI (13)
  - Corey Auger, BA: Top 5 Steps for Converting Online Opportunities into Loyal Paying Patients (17)

**12:00 pm – 12:30 pm**
- **Panel Discussion, James Carroll, Moderator**

**10:30 am – 12:00 pm**
- **Marketing Strategies for the Dental Practice**
  - Nick Clausen, MBA: Don’t Let Your Laser Collect Dust - Optimal Ways to Utilize and Market Your Laser (98)
  - Corey Auger, BA: Social Media Strategies that Drive ROI (13)
  - Corey Auger, BA: Top 5 Steps for Converting Online Opportunities into Loyal Paying Patients (17)

**12:00 pm – 12:30 pm**
- **Panel Discussion, James Carroll, Moderator**

**As of March 13, 2019 – Schedule Subject to Changes**
## 2019 Annual Conference and Exhibition Program Schedule

As of March 13, 2019 – Schedule Subject to Changes

### 12:30 pm – 1:30 pm
- **Lunch Break in Exhibit Hall**

### 1:00 pm
- **Ending time for Bids Dr. Eugene Seidner Scholarship and Research Grants Silent Auction**

### 1:00 pm – 1:30 pm
- **Photobiomodulation**
- **Marketing Strategies for the Dental Practice**

### 1:30 pm – 2:00 pm
- **Rodrigo Mosca, DDS, MSc, PhD**
  - Novel Approach for Photobiomodulation Therapy Using Smart Wound Dressings with Ruthenium Down-Converting Nanospheres (57)
- **Leonard Tau, DMD**
  - Raving Patients: The Ultimate Social Proof (10)
- **Charles Kerbage, PhD, MBA**
  - Beyond Cutting with the 9.3-μm CO2 Laser: Applications from Snoring, Peri-Implantitis, to Caries (80)

### 2:00 pm – 2:30 pm
- **Patricia Pine, RDH, COM**
  - How Lasers Are a Clear and Concise Tool for Tethered Oral Tissue Releases (63)
- **Ann Liebert, PhD**
  - The Oral Microbiome/Holobiont: Importance in the Photobiomodulation Treatment of Cardiac and Neurodegenerative Disease (56)
- **Blake Cameron, DDS**
  - Er:YAG in Everyday Dentistry (59)

### 2:30 pm – 3:00 pm
- **Sara Ehsani, DDS**
  - Debris and Smear Layer Removal from Root Canal Walls by Er,Cr:YSGG Laser Irradiation (39)
- **Justin Kolnick, DDS**

### 3:00 pm – 3:30 pm
- **Erbium Lasers**
- **Endodontics**

### 3:00 pm – 4:00 pm
- **Blake Cameron, DDS**
  - Er:YAG in Everyday Dentistry (59)
- **Mountaha Al Hage, DMD**
  - Evaluation of the Safety and Efficiency for Different Pulse Durations of an Er:YAG Laser During Ceramic Bracket Debonding (29)
- **Aric Sven**
  - Proper Care and Maintenance of an Erbium Laser Will Improve Laser and Instrument Performance (52)

### 3:30 pm – 4:00 pm
- **Sara Ehsani, DDS**
  - Debris and Smear Layer Removal from Root Canal Walls by Er,Cr:YSGG Laser Irradiation (39)
- **Justin Kolnick, DDS**
- **Giovanni Olivi, MD, DDS**
  - Laser Endodontics Using SWEEPS: Bringing Endodontics to the Next Level (10)

### 4:00 pm – 4:30 pm
- **Mountaha Al Hage, DMD**
  - Evaluation of the Safety and Efficiency for Different Pulse Durations of an Er:YAG Laser During Ceramic Bracket Debonding (29)

### 4:30 pm – 5:00 pm
- **Aric Sven**
  - Proper Care and Maintenance of an Erbium Laser Will Improve Laser and Instrument Performance (52)
- **Lawrence Kotlow, DDS**
  - Clinical Applications with the 9.3-μm CO2 Laser Wavelength (17)

### 5:00 pm – 6:00 pm
- **ALD General Membership Meeting and Tribute to Dr. Art Levy**

### 6:30 – 7:30 pm
- **ALD Presidential Awards Recognition Ceremony and Reception**

### 7:30 pm – 10:30 pm
- **President's Celebration Party - Everyone Welcome (RSVP Required by 2:00 pm Thursday)**

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**Photobiomodulation**

**Marketing Strategies for the Dental Practice**

**Raising Patients: The Ultimate Social Proof**

**Novel Approach for Photobiomodulation Therapy Using Smart Wound Dressings with Ruthenium Down-Converting Nanospheres**

**Beyond Cutting with the 9.3-μm CO2 Laser: Applications from Snoring, Peri-Implantitis, to Caries**

**How Lasers Are a Clear and Concise Tool for Tethered Oral Tissue Releases**

**Evaluation of the Safety and Efficiency for Different Pulse Durations of an Er:YAG Laser During Ceramic Bracket Debonding**

**Proper Care and Maintenance of an Erbium Laser Will Improve Laser and Instrument Performance**


**Debris and Smear Layer Removal from Root Canal Walls by Er,Cr:YSGG Laser Irradiation**

**Laser Endodontics Using SWEEPS: Bringing Endodontics to the Next Level**

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<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00 am – 8:30 am</td>
<td>Continental Breakfast in Exhibits PRAIRIE DEF</td>
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<tr>
<td>7:00 am – 12:00 pm</td>
<td>Speaker Check in GRANITE BOARDROOM</td>
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<tr>
<td>7:00 am – 2:00 pm</td>
<td>Registration Open PRAIRIE</td>
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<tr>
<td>7:00 am – 8:30 am</td>
<td>Continental Breakfast in Exhibits PRAIRIE DEF</td>
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<tr>
<td>8:00 am – 9:00 am</td>
<td>Special Program: ASSET PROTECTION</td>
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<tr>
<td>9:00 am – 10:00 am</td>
<td>Hands-On (65)</td>
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<tr>
<td>10:00 am – 11:00 am</td>
<td>Diode lasers for Dentistry's laser treatment</td>
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<tr>
<td>10:00 am – 11:30 am</td>
<td>Hands-On Workshop TOTs</td>
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<td>Hands-On Workshop TOTs</td>
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<tr>
<td>10:00 am – 10:30 am</td>
<td>Morning Break in Exhibit HALL PRAIRIE DEF</td>
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<tr>
<td>10:30 am – 11:00 am</td>
<td>Laser safety fundamentals training</td>
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<tr>
<td>10:30 am – 12:00 pm</td>
<td>Radiation safety fundamentals training</td>
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<tr>
<td>11:00 am – 12:00 pm</td>
<td>Lunch in the Exhibit Hall</td>
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| 11:00 am – 12:00 pm | PRAIRIE A  
Leland McKay, Keys to Lawsuit Prevention, Medical License Protection and Tax Savings (12) |
| 12:00 pm – 1:30 pm | Farewell Lunch in Exhibit Hall PRAIRIE DEF |
| 1:30 pm – 4:30 pm | Diode Advanced Workshop PRAIRIE A  
Gerald Ross, DDS, Arun Darbar, BDS, Mel Burchman, DDS  
Photobiomodulation Workshop (9) |
| 1:30 pm – 4:30 pm | Diode Advanced Workshop PRAIRIE C  
John Graeb, DMD, Magd. FCD  
Hands-On Workshop - Diode Laser for Dentists: Advanced Applications (70) |
| 1:30 pm – 4:30 pm | Dental Hygiene Advanced Workshop BLUESTEM 1  
Heather Angers, RDH  
Hygiene Advanced Workshop: Using Lasers Around Implants (46) |
| 1:30 pm – 4:30 pm | Dental Hygiene Advanced Workshop BLUESTEM 2  
Larry Lieberman, DDS and Terry Allard, DMD  
Laser Facial Aesthetics: Techniques You Can Learn and Bring into Your Practice (104) |
| 1:30 pm – 3:30 pm | Pediatric TOTS Symposium Continues PRAIRIE B  
Ken Piercy, MTI CST-D  
CranioSacral Therapy for Improvement of Recovery for Tongue / Lip Tie Revision (92) |
| 2:30 pm – 3:30 pm | Laser Safety Training Continues SUNFLOWER  
Diana Batoon, DMD  
Airway, Breathing and Children: Pay Attention to This Now! (54) |
| 3:30 pm – 4:15 pm | Laser Safety Training PRAIRIE B  
Saadia Mohammed, DDS  
Is Tongue-Tie the Root Cause of Childhood Chronic Disease? (65) |
| 1:30 pm – 4:30 pm | Laser Safety Training PRAIRIE B  
Keith Brewer, DDS, FALD  
Laser Safety Officer Training – Module 2 of 2 (100) |
EXHIBITORS

Dentistry's Laser Meeting

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New Trends, Techniques, and Technology Programs

These are 10-minute lectures on Thursday April 4, 2019 to the full audience in attendance. The presentations occur on the first day of the conference and no other programs are scheduled at this time. No CE credit is provided for these sessions.

**In the Prairie Ballroom: 3:45 p.m. – 5:00 p.m.**

New Trends and Technology – Presentations by ALD Gold Sponsors

- 3:45 Kingsview Asset Management
- 4:30 ProBiora
- 4:40 Legally Mine
- 4:50 Perio Protect
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CareCredit is a health, wellness and personal care credit card dedicated to helping people get the care they want and need. For more than 30 years, CareCredit has helped millions of people by offering special financing options with convenient monthly payments. CareCredit is accepted at more than 200,000 locations for a wide variety of health and wellness procedures, treatments, products and services. CareCredit is a Synchrony solution, the largest provider of private label credit cards in the U.S.

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Multi Radiance • Booth 314

Manufacturer of FDA cleared laser therapy device for drug-free and side-effect-free pain relief.

OraVital Inc. • Booth 312

OraVita’s mission is to provide accurate biofilm diagnostic tools and effective antibiotic treatment to predictably control the oral infections that cause periodontal disease, halitosis, caries and peri-implantitis. The OraVital System offers state-of-the-art q-PCR DNA analysis of oral pathogens that includes the major periodontal pathogens, S.mutans and Candida albicans. This provides the practitioner with information for detection of the patient’s periodontal disease, peri-implantitis, halitosis issues and potential for caries and treatment using OraVital’s unique and highly effective antibiotic rinses and ointments.

Sventech • Booth 117

Sventech specializes in electronic troubleshooting to service and maintain dental lasers. Our optical experts provide service for discontinued fiber delivery systems. Over the past 25 years we have worked with several laser manufacturers to develop and service their products. With in-house electronic engineers we make repairs at the component level. We carry internal parts and accessories such as fibers, hand pieces, tips, mirrors and strippers.

THOR Photomedicine, Inc. • Booth 217

THOR Photomedicine specializes in photobiomodulation (PBM) technology and as an industry leader have presented to the US Congress, United Nations, and NICE (UK) on the use of PBM for pain management. While drugs cover up pain, our devices actually heal people and treat the source of the pain. THOR products have become indispensable tools at world class institutions including Harvard, NYU, The Veterans Administration, NHS (UK) and others, revolutionizing pain management and injury recovery programs.

Ultradent Products, Inc. • Booth 208

Ultradent Products, Inc. is a leading developer and manufacturer of high-tech dental materials, devices, and instruments worldwide. Ultradent’s vision is to improve oral health globally. Ultradent even works to improve the quality of life and health of individuals through financial and charitable programs.
The Academy of Laser Dentistry wishes to thank its Corporate Members* for their continued support and participation in the ALD mission.

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ProBiora Health LLC
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THOR Photomedicine, Inc.
Ultradent Products, Inc.
Ultralight Optics

We would also like to thank the following companies who graciously sponsored items to the conference.

Fotona
Innovative Optics
Sventech, Inc.

Many thanks to all ALD 2019 Exhibitors who add a valuable conference experience with products and services to enhance patient care.

Please visit their booths and learn about all they have to offer.
J. Terry Alford, DMD
Private Practice, Bradenton, Florida, USA

Dr. Alford graduated with honors from the University of Alabama School of Dentistry in 1978 and has maintained a private practice in Bradenton, Florida, for 39 years. He is devoted to excellence and continuing education, and has completed numerous educational and training programs including implant reconstruction at Northwestern University, functional occlusion with Dr. Peter Dawson, bone management and implant placement with sinus elevation from the Bicon Institute, neuromodulators for the treatment of temporomandibular joint disorders, botulinum toxin and facial aesthetic rejuvenation at the Aesthetic Enhancement Institute, facial injectables and Botox at the Facial Beauty Institute, facial esthetics and rejuvenation using the Fotona Nd:YAG and Er:YAG laser, and other programs. Dr. Alford was elected to the Board of Directors of the International Academy of Facial Aesthetics in 2018. He is a member of the American Dental Association, American Academy of Implant Dentistry, International Academy of Facial Aesthetics, American Academy of Cosmetic Dentistry, and other organizations. Dr. Alford has been using energy-based devices and lasers since 1994 in applications related to aesthetics and dentistry. He uses CO2, Er:YAG, Er,Cr:YSGG, argon, diode, and Nd:YAG lasers.

Disclosure:
Dr. Alford is in private practice in Bradenton, Florida, and has no commercial relationships.

Contact Dr. Alford by e-mail at jalford627aol.com.

Mountaha Al Hage, DMD
Private Practice, Algiers, Algeria

Dr. Al Hage is the medical director and head of the prosthetic department in Clinique Dentaire Kouba in Kouba, Algeria. She is also the supervisor of all laser procedures conducted in the Clinique Dentaire Kouba and the Clinique Dentaire Internationale d’Oran, Bir El Djir, Algeria. Dr. Al Hage is chairperson of the Academy of Laser Dentistry (ALD) Affiliated Study Club of Algeria. She began using lasers in 2012 and has obtained ALD Standard Proficiency in 940-nm diode and Er,Cr:YSGG lasers. Dr. Al Hage achieved Mastership in Lasers in Dentistry from RWTH Aachen University in Germany and is a member of the World Academy for Laser Education and Research in Dentistry.

Disclosure:
Dr. Al Hage has reported no conflicts of interest.

Contact Dr. Al Hage by e-mail at moonhage337@gmail.com.

Walid Altayeb, DDS, MSc, PhD, FALD, MALD
Private Practice, Abu Dhabi, United Arab Emirates (UAE)

Dr. Altayeb received his dental degree from the Faculty of Dentistry, Damascus University, in 1998 and completed his Master of Science in Periodontics in 2004 and Doctorate of Philosophy in Periodontics in 2007. He had been working as clinical supervisor in Department of Periodontics, Damascus University, Syria. Dr. Altayeb achieved an advanced level of knowledge in the application of lasers in dental science and patient treatment (Advanced Proficiency certificates from the Academy of Laser Dentistry in 980-nm diode and Er:YAG lasers). He has Mastership in the Academy of Laser Dentistry, is a member of the ALD Board of Directors and Speakers Bureau, Chair of the ALD International Relations Committee, and Founder and Chair of the ALD Gulf Laser Chapter. He is the founder of the laser section in the British Academy of Implant and Restorative Dentistry (BAIRD) and the founder of the Professional Diploma in Advanced Laser Dentistry of BAIRD. Dr. Altayeb conducts “Pink Aesthetics & Laser Dentistry” courses with the British Academy of Implant and Restorative Dentistry in Qatar, Bahrain, Saudi Arabia, Oman, and UAE. He has participated in many conferences in the Middle East and USA as a speaker in the fields of periodontal medicine and laser dentistry. He is working in private practice as a periodontist and implantologist in the Tamim Dental Polyclinic, Doha, Qatar, The British Lasik and Cosmetic Surgery Center, Dubai, UAE, and the Masters Dental and Aesthetic Center, Abu Dhabi, UAE.

Disclosure:
Dr. Walid is a speaker in the British Academy of Implant and Restorative Dentistry and receives a modest honorarium for his educational activities.

Contact Dr. Altayeb by e-mail at dreltayeb@hotmail.com.
Heather Angers, RDH
Belmar Park Dental Care, PC, Lakewood, Colorado, USA
Heather has been a registered Dental Hygienist in Colorado since 2009. She started using an 810-nm diode laser at that time. Since then she has obtained both the standard and advanced proficiencies through the Academy of Laser Dentistry (ALD). Heather is the auxiliary chair board member of the ALD, member of the American Dental Hygienists’ Association (ADHA) and an auxiliary member of the International Congress of Oral Implantologists (ICOI) and the Association of Dental Implant Auxiliaries (ADIA). Her passion in lasers started when she was a dental assistant when she saw how they had changed the way her dentist at the time treated patients. Heather has taken that same passion into her dental hygiene career. She plans to continue to learn from the excellent sources available by the ALD and also hopes to become a course provider so she can pass that same expertise to the coming generations of laser dental hygienists.

Disclosure:
Ms. Angers works for and receives modest compensation from Forward Science and helps educate and distribute the OralID oral cancer detection device along with its diagnostic tools. This affiliation has no conflict of interest with this lecture.

Contact Ms. Angers by e-mail at hangersl@yahoo.com.

Corey Auger, BA
Crystal Clear Digital Marketing, Orlando, Florida, USA
Corey Auger is a seasoned educational speaker for countless medical associations around the country and is National Sales Executive for Crystal Clear Digital Marketing. Mr. Auger attends more than 30 medical conferences annually, educating clinicians and staff on how to effectively find, serve, and keep more patients profitably. He has also been a guest speaker at seminars for Clarion Medical Technologies, American Med Spa Association (AmSpa), and Aesthetics Biomedical.

Disclosure:
Mr. Auger receives significant financial compensation as a National Sales Executive for Crystal Clear Digital Marketing.

Contact Mr. Auger by e-mail at aneff@crystalcleardm.com.

Diana A. Batoon, DMD
Arizona Center for Breathing & Sleep Wellness, Scottsdale, Arizona, USA
Dr. Batoon is an international speaker and educator on sleep apnea and has been creating momentum for change in the dental profession. She challenges and motivates providers to screen and evaluate children in today’s society for possible sleep-related breathing disorders. She has been in private practice for over 24 years and continues to help many families who struggle with children who have sleep issues. With her knowledge and expertise in growth and development in children, she incorporates the use of lasers to assess and improve their breathing habits. Dr. Batoon has been most successful in incorporating a collaborative team to achieve success in improving the sleep hygiene of her patients and creating a much-needed awareness among dental professionals. She is a member of the American Academy of Dental Sleep Medicine (AADSM), Spear Faculty Club and CEREC Mentor Club. She has published articles in Dentaltown and Dental Sleep Practice magazines and has been featured in the Arizona Dental Association’s Inscriptions journal and Sonoran Living ABC.

Disclosure:
Dr. Batoon is an educator for Spear Education on pediatric airway and Ortho Tain / Healthy Start.

Contact Dr. Batoon by e-mail at driadianabatoon@yahoo.com.

Scott D. Benjamin, DDS
Eastman Institute for Oral Health, University of Rochester, Rochester, New York, USA
Dr. Scott Benjamin is an internationally recognized expert and lecturer on Dental Lasers, Oral Cancer and Advanced Dental Technologies and is in private practice in rural upstate New York where he utilizes several lasers of different wavelengths on an everyday basis. Additionally, Dr. Benjamin has faculty appointments at several dental universities and is the Chairman of the ADA Standards Committee Working Group on Dental Lasers. Scott is also a member of ANSI Sub-committee Z-136 on Laser Safety and is a Past-President of the Academy of Laser Dentistry (ALD). He is the Technology Editor for the Compendium and has published over 300 articles, textbook chapters, and technical reports on dental lasers, diagnosis, and advanced dental technologies and is a member of the editorial board of several prestigious peer reviewed dental journals.

Disclosure:
Dr. Benjamin is the president of Advanced Integration & Mentoring; consultant and director of laser education for Dentsply Sirona Dental Inc.; clinical director of National Dental Inc.; faculty expert for the Laser & Health Academy; consultant and clinical advisor for oraPharma, Inc., and LED-Medical Diagnostics, Inc.; adjunct professor at Midwestern University Colleges of Dental Medicine; and associate professor at the Eastman Institute for Oral Health at the University of Rochester.

Contact Dr. Benjamin by e-mail at sbenjamin@dentalaim.com.
Marvin Berman, PhD, CBT
QuietMIND Foundation, Elkins Park, Pennsylvania, USA

Dr. Berman began practice as a Neo-Reichian psychotherapist and psychologist in Pennsylvania from 1999 to 2010, certifying in electroencephalogram (EEG) biofeedback in 2003. He has been integrating health psychology and neurotherapy and established the QuietMIND Foundation as a response to the lack of solid outcome research in this area. His professional focus shifted to photobiomodulation research in 2008 when he began working with Gordon Dougal, MD, supporting the development of the Cognitolite transcranial and intracocular photobiomodulation (PBM) technology. He has since initiated quantitative encephalography (qEEG)-based outcome studies with both the Cognitolite and Vielight transcranial and intranasal PBM technology. Currently he is collaborating with the Texas A&M College of Medicine and Baylor Scott & White Health Research Institute studying the efficacy of PBM for early-to-mid-stage dementia. He uses applied clinical research and translates ongoing clinical findings into structure research protocols to explicate and validate PBM mechanisms of action.

Disclosure:
Dr. Berman is the founder and president of the QuietMIND Foundation.

Contact Dr. Berman by e-mail at marvinberman@quietmindfdn.org.

Behnam Bolhari, DDS
University of Tehran, Tehran, Islamic Republic of Iran

Dr. Bolhari grew up in Tehran, Iran, and received his dental degree from Tehran University of Medical Sciences in 1993. In 1999, he finished his residency training in Endodontics and obtained a master’s degree in dental sciences. Since then he has been a full-time professor at Tehran University of Medical Sciences, Endodontic department. He also works at the Center for Dental Research. Dr. Bolhari performs research in restorative dentistry, endodontics, and laser in dentistry. He has numerous publications and award nominations. Dr. Bolhari’s personal philosophy is to teach his students to treat patients with honesty, compassion, transparency, and the highest standard of care.

Disclosure:
Dr. Bolhari has reported no conflicts of interest.

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Laura D. Braswell, DDS
Buckhead Periodontics, Atlanta, Georgia, USA

Dr. Braswell is the owner of Buckhead Periodontics where she enjoys treating patients using alternative therapies that save teeth and enhance esthetics. She is passionate about laser periodontal therapy and works with several companies on research and development. Dr. Braswell graduated from the University of North Carolina School of Dentistry in 1982. After practicing general dentistry in Raleigh, North Carolina, she joined the faculty of the Emory University School of Dentistry and completed a four-year surgical residency in Periodontology. Dr. Braswell was an undergraduate instructor, director of the hygiene clinic, periodontal research center investigator, graduate resident faculty member, and a research faculty member at Yerkes National Primate Research Center at Emory University. Dr. Braswell is the staff dentist for Zoo Atlanta, the Georgia Aquarium, and the Georgia State University Primate Research Laboratory. She is an adjunct faculty member in the Department of Periodontology at the Dental College of Georgia at Augusta University.

Dr. Braswell is a Fellow of the American College of Dentists, the International College of Dentists, and the Pierre Fauchard Academy. She is a Diplomate of the American Academy of Periodontology, a Charter member and Master Clinician in the Academy of Laser Dentistry, and an Honorary Fellow of the American Veterinary Dental Society.

Disclosure:
Dr. Laura Braswell has received research support from Biolase. She currently conducts research on periodontal therapy involving diode lasers.

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Keith Brewster, DDS, FALD
Private Practice, Dallas, Texas, USA

Dr. Brewster graduated from Baylor College of Dentistry in 1984 and maintains a private practice in Dallas, Texas, practicing General Dentistry. He has taken extensive continuing education including orthodontics, laser, implantology, occlusion, cone beam computed tomography (CBCT), and digital dentistry.

Disclosure:
Dr. Brewster has received modest compensation from Sirona for individual meetings to perform live guided dental implant placement with digital crown design surgeries. He is a lecturer for Dental Aim.

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Mel A. Burchman, DDS, MALD
Private Practice, Langhorne, Pennsylvania, USA
Dr. Burchman has maintained a general dentistry practice in Bucks County, Pennsylvania, since 1976. He began using lasers in 1999 and now has eight lasers in his practice. In 2001, he received Advanced Proficiency in the Nd:YAG laser from the ALD. In 2003, he received the The Science Behind the Clinic of Laser Dentistry Award for his presentation, “Nd:YAG and Diode Laser Therapy in the Medically Compromised Patient,” and his office was written up in Men’s Health magazine in “The Drill Is Gone.” In 2005, he became a Certified Laser Educator with the Academy of Laser Dentistry and received its Certificate of Mastership in 2008. He has been published twice in the ALD journal Wavelengths on the subject of lasers in the care of medically compromised patients. Awarded the ALD’s Leon Goldman Award for Clinical Excellence in 2012, Dr. Burchman calls this work his passion. He has served the ALD as a mentor, examiner, chairman of many committees, member of the ALD Board of Directors, Executive Committee, Secretary, Treasurer, and is currently President-Elect. He was the General and Scientific Chairman of the ALD conference in 2015 and the Co-Program Chair of the American Society for Laser Medicine and Surgery conference in 2016, the same year he received his Recognized Course Provider certification. He is the Chairman of the ALD’s 2019 conference.

Disclosure:
Dr. Burchman is in private practice in Langhorne, Pennsylvania, and has no other commercial relationships. About 12 years ago he used to present for Sirona Dental, Benco Dental, and Henry Schein, but he does not now.

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Blake Cameron, DDS
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Dr. Cameron received his DDS degree from the Ohio State University College of Dentistry in 2012. He currently practices dentistry at Aspen Dental of Cache Valley in Logan, Utah. His goal is to simplify dentistry for patients by providing a wide variety of services in one convenient location. Since graduation, Dr. Cameron has received a Fellowship in the Academy of General Dentistry and the Academy of Laser Dentistry, as well as a Diplomate from the International Dental Implant Association. He currently chairs the continuing education committee for the Utah Academy of General Dentistry, where he shares his passion for learning with fellow dentists.

Disclosure:
Dr. Cameron is in private practice in Logan, Utah, and had no other commercial relationships.

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James D. J. Carroll, AMInstP, FRSM
THOR Photomedicine, Amersham, United Kingdom
James Carroll is an electronics engineer and is the founder and CEO of THOR Photomedicine Ltd. He is a recognized authority and much-published author on low-level laser therapy (LLLT) / photobiomodulation mechanisms of action, dose, dose rate effects, and the measurement and reporting of LLLT parameters.

Disclosure:
Mr. Carroll is founder and CEO of THOR Photomedicine, a LLLT manufacturing company and has ownership interest in Lumithera, Inc., a developmental stage medical device company developing photobiomodulation treatment protocols for age-related macular degeneration and other ocular indications, compensation for which is significant. THOR receives significant research support from the National Institutes of Health, National Institute for Health Research, Massachusetts General Hospital, Harvard School of Public Health, Brigham and Women’s Hospital, Sydney University Dental School, Birmingham University Dental School, Tel Aviv University, and others.

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Nick Clausen, MBA, PMP
Dental Laser Coaching, Las Vegas, Nevada, USA

Mr. Clausen’s past professional experience started in incentive marketing followed by joining the energy industry managing complex technology integration, but for the last 13 years his focus has been in the dental marketplace. Nick is the founder and owner of Dental Laser Coaching which offers clinical and product laser consultation services to various organizations and clinicians around the world.

Nick’s previous dental experience includes Vice President of Sales & Marketing for PIPStek, Intellectual Property (IP) owner of Photon Induced Photoacoustic Streaming (PIPS) in which he played a key role in the sale to Sonendo. Prior to this Nick was Vice President of Sales and Marketing for Implant Logistics and helped create The Dominican Training Institute, which is a hands-on surgical implant training course. Nick’s first immersion in dentistry was with HOYA ConBio where he progressed from Midwest Sales Representative to the Director of Sales & Marketing, managing their North American Dental Division.

Nick has a broad and deep understanding of the dental laser market. He has his Standard Proficiency in Laser Dentistry from the ALD and currently is the 2018 Chair of ALD’s Manufacturing Council and serves on ALD’s Educational Committee. He has attended trainings and consulted with numerous dental training organizations and dental manufacturers like A.T. Still University, Biolase, Bioresarch, Convergent Dental, Fortune Management, Fotona, Las Vegas Institute (LVI), NuCalm, Quanta Aesthetic Lasers USA, Sonendo, THOR, and UNLV Dental School.

Nick has his Bachelor of Business Administration (BBA) Degree from Iowa State University where he was a letterman on the football team. Nick earned an MBA from Creighton University where he studied both domestically and internationally at ESADE in Barcelona, Spain. He also has certifications in both Project Management & eCommerce from Georgia Tech University, completed The Program on Negotiation from Harvard Law School, and attained PMP (Project Management Professional) status from the Project Management Institute.

Disclosure:
Nick Clausen is a consultant and trainer for Convergent Dental. He is also a shareholder of Sonendo, on the Advisory Board of The Dominican Training Institute, and is an Affiliate Partner of NuCalm.

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Claudia C. Cotca, DDS, MPH
Washington Institute for Dentistry and Laser Surgery, Chevy Chase, Maryland, USA

Dr. Cotca is a three time graduate of the University of Michigan, where she received a Bachelor of Science in Chemistry and Cellular Molecular Biology, Master of Public Health in Toxicology, and Doctor of Dental Surgery. She is an international lecturer and aesthetic restorative dentist. She founded the Washington Institute for Dentistry and Laser Surgery in Washington DC Metro, a private practice institute with focus on technology and interdisciplinary smile reconstruction within facial neurologic and skeletal coordinates. For more than a decade she has developed customized dental protocols on obstructive sleep apnea, temporomandibular disorders, sports dentistry, systemic implications in oral aesthetic rehabilitation, single-tooth and full-mouth restorative dentistry, lasers, implants, dental anti-aging, and whitening therapies. Through her studies in Toxicology and as founder of the C3 Think Tank, she develops real-time oral clinical protocols for systemic conditions like diabetes, immunosuppression, cancer chemotherapy and radiation, dental facial anti-aging, and whitening. Dr. Cotca has served on national Boards and Committees including the Academy of Laser Dentistry, American Academy of Oral Medicine, American Diabetes Association DC Leadership Board, American Dental Association Standards Committee on Dental Products, Subcommittee on Lasers, Whitening, Biologic Evaluation, as U.S. Delegate to International Organizations of Standardization, and held representative roles in the World Dental Federation and American Dental Association, among others. Her memberships rank with the Academy of Fixed Prosthodontics, American Society for Laser Medicine and Surgery, Academy of Laser Dentistry, and many others. Since 2001 she has been involved in federal legislation and represented the American Dental Association and American Academy of Oral Medicine as Spokesperson and Dental Expert on Capitol Hill, testified before United States Congress, and has appeared on media and online portals, SiriusXM Doctor’s Radio, ABC News, and NBC News as Dental and Oral Health Expert. She is Fellow of the American Academy of Oral Medicine, International College of Dentists, Pierre Fauchard Academy, and is a member of the International College of Prosthodontists.

Disclosure:
Dr. Cotca has reported no conflicts of interest.

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Arun Darbar, BDS
Private Practice, Smile Creations Dental Innovations, Leighton Buzzard, United Kingdom

Dr. Darbar is a multi-award-winning laser and aesthetic dentist. He serves on the certification committee of the British Academy of Cosmetic Dentistry (BACD) as an accredited member and examiner. A Master, Educator, and Founder member of the World Clinical Laser Institute (WCLI), he has served on their advisory board and is involved with the American Society for Laser Medicine and Surgery (ASLMS), World Association for Laser Therapy (WALT), North American Association for Photobiomodulation Therapy (NAALT), British Society for Occlusal Studies (BSOS), World Federation for Laser Dentistry (WFLD), and International Society for Oral Laser Applications (SOLA). An ex-officio Board member and executive secretary of the Academy of Laser Dentistry, he holds a Master's and Educator status and has served on their committee as Chair of International Relations and Co-Chair of Education and Certification Committees. He has lectured internationally on the use of lasers for more than 20 years, written numerous articles, and pioneered and introduced the concept of photobiomodulation with surgical lasers and preconditioning using various wavelengths. His data has been presented and published at proceedings of SPIE IN 2006, 2007, and 2009/10 in San Francisco, WALT 2008 South Africa and 2012 Australia.

Disclosure:
Dr. Darbar lectures for other educational organizations and receives a modest honorarium and expenses for these activities. They are providing equipment for his workshop. He receives discounts on devices and supplies. He conducts trials of new devices and provides unbiased feedback. Dr. Darbar is in private practice in Leighton Buzzard, UK, and has no other commercial relationships with any specific company or manufacturer.

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Sara Ehsani, DDS
University of Connecticut, Farmington, Connecticut, USA

Dr. Ehsani is a second-year pediatric dentistry resident at University of Connecticut. She has a strong passion for serving others and has committed much of her education volunteering and organizing events aimed at improving oral health. Her residency has given her extensive training, including caring for infants and patients with special needs.

Dr. Ehsani was born in England and grew up in Iran. She graduated from Tehran University School of Dentistry with Honors in 2012. She then moved to the United States to continue her education in 2013. She was enrolled in Implantology and Hospital Dentistry Preceptorship Programs at the University of California Los Angeles (UCLA) and was awarded a certificate upon completion. Immediately, she was accepted to the UCLA dental school. She graduated Cum Laude with a DDS and Dean’s Honors in 2016. She also served as class president in local chapters of the American Dental Education Association (ADEA), American Academy of Pediatric Dentistry (AAPD) and Dental Anesthesiology, devoted to creating the best possible education for the dental students. Upon graduation, she started her residency at the University of Connecticut.

Residency training has given her the opportunity to work as a teaching assistant with dental students and to volunteer her time collaborating with health organizations. Additionally, she has helped facilitate opportunities for residents to contribute to AAPD activities. Outside of clinic, she enjoys her work managing community outreach events, where she is able to raise oral health awareness in underprivileged families.

Dr. Ehsani is an innovative researcher. One of her greatest accomplishments is publishing 11 articles in various topics, including laser, pediatrics, implants, dental materials, and radiology. She was the primary investigator in five of her publications. She presented her research at 14 dental conferences. Her current research focuses on oral health literacy. She will continue her passion in education and research by working in both private practice and academic setting as an adjunct faculty.

Disclosure:
Dr. Ehsani has reported no conflicts of interest.

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Nicole Fortune, RDH, MBA
Private Practice, Richmond, Vermont, USA

Nicole Fortune is a registered dental hygienist who works in a busy periodontal office providing nonsurgical and preventative care. Nicole believes the best patient care happens when combining her dental hygiene knowledge with the latest technology. She is a recognized expert in training dental professionals in areas of periodontics, including peri-implantitis. She has delivered multiple educational presentations to numerous institutions, clubs, and professional groups across the country.

Nicole holds many certifications including CO2, diode, and Nd:YAG laser certification. She is currently the only dental professional in Vermont who is certified in Perioscopy. She earned her hygiene degree and her BA from the University of Vermont, and holds an MBA from Champlain College in Vermont.

Disclosure:
Ms. Fortune is a lecturer for OraVu and Zest Dental.

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John J. Graeber, DMD, MAGD, FICD
Morristown Memorial Hospital, East Hanover, New Jersey, USA

One of America’s most experienced laser dentists, Dr. Graeber maintains a full-time comprehensive cosmetic practice in East Hanover, New Jersey. 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.

Disclosure:
Dr. Graeber lectures for Pioneer and Ultradent Lasers and receives a modest compensation for these activities. Both companies provide equipment for workshops. He receives free devices and supplies. He is the principal of Soft Touch Seminars and provides online laser education.

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Martin Handfield, MSc, PhD
ProBiora Health LLC, Tampa, Florida, USA

Dr. Handfield is the Senior Vice President of Discovery Research for ProBiora Health, LLC, and previously has served as the Director of Research and Development. Prior to joining the company, he held a position as Tenured Associate Professor at the Center for Molecular Microbiology and the Department of Oral Biology at the University of Florida College of Dentistry, where he co-invented in vivo-induced antigen technology (IVIAT) and co-founded iviGene Corp. and Epicure Corp. to commercialize related technologies. Dr. Handfield holds a BSc degree in Biochemistry, and MSc and PhD degrees in Microbiology and Immunology from the Université Laval College of Medicine in Canada, and did postdoctoral training at the University of Florida. He has published several scientific papers and reviews, and is the recipient of a number of honors and awards, including a PhD Scholar Award from the Canadian Cystic Fibrosis Foundation.

Disclosure:
Dr. Handfield periodically lectures for ProBiora Health, LLC, as he is one of the former scientists and researchers of their product and is now a consultant to the company.

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David Harris, MS, PhD
Rutgers School of Dental Medicine, Newark, New Jersey, USA

Dr. Harris holds an MS in psychology and a PhD in neurophysiology. He has experience as Director of Research and Professor of Biology, Microbiology, Psychology, Communicative Disorders, Otolaryngology, Anatomy, Surgery, Oral Biology, General Dentistry, and Periodontics at several medical and dental schools, including Northwestern University, University of Illinois Medical Center, University of California – San Francisco, and University of Washington. Dr. Harris has expertise in neuroscience, photomedicine, and photobiology with more than 150 publications in 12 medical specialties. In 2004 he cofounded PathoLase, Inc., which introduced the first effective laser treatment for nail infections. Since 1980 he has been Director of Bio-Medical Consultants, Inc. (BMC), a contract research organization. BMC assists medical laser and neurological device companies to bring their products to market through regulatory strategies, basic science research, and controlled clinical trials. He is currently faculty at California State University Chico, Department of Biological Sciences, and holds an adjunct appointment at Rutgers School of Dental Medicine, Department of Periodontics. He has been Science Advisor for Millennium Dental Technologies, Inc, since 1999.

Disclosure:
Dr. Harris holds an adjunct appointment at Rutgers School of Dental Medicine, Department of Periodontics and has been Science Advisor for Millennium Dental Technologies, Inc.

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James H. Hyland, DDS, BSc
By The Lake Dental, Toronto, Ontario, Canada

Dr. Hyland graduated from the University of Toronto in 1976 and has always been one of the first to implement the latest techniques, research, and philosophies in oral care. In addition to private practice, Dr. Hyland’s experience includes teaching at the University of Toronto Faculty of Dentistry, Seneca College, and George Brown College as well as serving as the dental staff member at North York Hospital. He regularly lectures internationally and writes on a variety of topics related to diagnosis and nonsurgical treatment of periodontal disease, interceptive preventive care, decreasing the oral systemic risk, and breath odor.

Dr. Hyland is a 42-year member of the Canadian Dental Association and Ontario Dental Association. Respected for his professionalism and dedication to the dental profession, he has served on numerous boards and committees of his local society for more than three decades while serving two terms as president. In 2007, he was the first dentist to use the OraVital system and co-founded OraVital Inc. to provide dental and medical practitioners with the most advanced and effective nonsurgical solutions for detecting and treating gum disease and bad breath available.
His goal is help dental professionals effectively and predictably control periodontal disease. Dr. Hyland is currently CEO and President of OraVital Inc. He is a speaker for Procter and Gamble.

Disclosure:
Dr. Hyland is CEO, President, and shareholder of OraVital Inc., a company that offers antibiotic rinses, whole mouth bacterial testing, and team coaching to dental offices. He speaks for OraVital.

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Charles Kerbage, PhD, MBA
Convergent Dental, Needham, Massachusetts, USA
Dr. Kerbage graduated from Columbia University with a PhD in Applied Physics and Boston University with an MBA degree. He is a technical leader with business acumen and over 15 years of experience in scientific innovation and transitioning of technical development into game-changing solutions in medical devices, life sciences, and photonics industries.

Disclosure:
Charles Kerbage is a Vice President of Research & Development at Convergent Dental, Inc.

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Yooson Kim, DMD
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Dr. Kim is a graduate of Franklin and Marshall College, the University of Pennsylvania School of Dental Medicine, and the Hospital of the University of Pennsylvania Oral Medicine residency program in Philadelphia, Pennsylvania. She runs a private practice that has grown primarily through referrals by current patients who have entrusted her with their dental care. Dr. Kim is committed to delivering outstanding dental care with integrity, comfort, and a focus on each patient as an individual. She is a member of the American Dental Association, Pennsylvania Dental Association, Berks County Dental Society, Academy of Laser Dentistry, and the American Academy of Oral Medicine.

Disclosure:
Dr. Kim is a consultant and speaker for Convergent Dental, Inc. She is also a beta tester for Solea updates. She receives a modest honorarium for these activities.

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Jacqueline Kincer, IBCLC, COMS
Holistic Lactation, Phoenix, Arizona, USA
Jacqueline Kincer offers solution-driven lactation and orofacial myology services with a holistic approach. She founded her private practice in 2016 and has been validating concerned parents’ intuitions for years. As they meet their breastfeeding goals met. Her comprehensive and authoritative knowledge resolves painful latching, tongue-tie, low milk supply, pumping issues, bottle feeding, and more. As a mother of two tongue-tied babies herself, Jacqueline’s strategic and relatable approach to identifying each unique problem is unparalleled as she provides client screenings and evaluations around the world. As a unique expert combing the fields of lactation consulting and Orofacial Myology, she can regularly be seen speaking at medical conferences and conventions. She works locally and worldwide through telehealth.

Disclosure:
Ms. Kincer is in private practice in Phoenix, Arizona, and has no other commercial relationships.

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**Justin Kolnick, DDS**  
Advanced Endodontics of Westchester, White Plains, New York, USA  
Dr. Kolnick received his dental training cum laude from the University of the Witwatersrand in Johannesburg, South Africa. He was the first dental school graduate to be awarded the prestigious University Scholarship for Overseas Postgraduate Study. Dr. Kolnick completed his postdoctoral endodontic training at Columbia University School of Dental and Oral Surgery in the City of New York.  
For the past 36 years, Dr. Kolnick has been in private practice limited to endodontics in Westchester County, New York. His practice, Advanced Endodontics of Westchester, is dedicated to fostering excellence in endodontics through education and the incorporation of the latest technology. For the past 10 years he has developed and incorporated laser-assisted protocols in his practice.  
Dr. Kolnick has been committed to endodontic education, first as an Associate Clinical Professor in Endodontics at Columbia University and then as an Attending at Westchester Medical Center, an Associate Clinical Professor in Endodontics at New York Medical College, and an Attending at St. Barnabas Hospital. Although he no longer holds these positions, he continues to lecture extensively on local, national, and international levels and has published several articles on endodontics. Currently, he is a Clinical Mentor for Biolase, Inc., and his responsibilities include conducting Advanced Training Courses for endodontists as well as consulting on clinical applications for lasers in endodontics.  
**Disclosure:**  
Dr. Kolnick is a Clinical Mentor and lectures for Biolase, Inc., and receives a modest honorarium for these activities. They are providing equipment for this workshop. He receives discounts on devices and supplies.  
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**Lawrence Kotlow, DDS**  
Private Practice, Albany, New York, USA  
Dr. Kotlow is a 1972 graduate of SUNY Buffalo Dental School, and completed his pediatric residency at the Children’s Hospital in Cincinnati, Ohio between 1972-1974. Since 1974 he has had a private practice in Albany, New York. He became Board Certified in Pediatric Dentistry in 1980, and is a Fellow in the American Board of Pediatric Dentistry. Dr. Kotlow has served as President of the Third District Dental Society of New York State and served on many committees at the State level. He is a member of the American Dental Association, International College of Dentists, New York State Dental Association, as well as a member since 2000 of the Academy of Laser Dentistry (ALD). As a member of the ALD, Dr. Kotlow served on the Board of Directors, achieved Advanced Proficiency in erbium lasers as well as Standard Proficiency in the use of diode, 9300-nm CO2, and Nd:YAG lasers, and ALD Mastership status. He was the 2014 recipient of the Leon Goldman Award for Clinical Excellence from the ALD. He helped establish the ALD one-day pediatric program at the annual session. Dr. Kotlow has lectured to more than 5000 health care professionals on the diagnosis, laser treatment, and postsurgical care of infants. In addition to speaking at Academy meetings, he has lectured on lasers and pediatric dentistry throughout the United States and internationally in Israel, Canada, Taiwan, France, England, Australia, and Italy He has contributed to textbook chapters on the use and benefits soft tissue lasers, hard tissue lasers, and photobiomodulating lasers in pediatric dentistry in the Dental Clinics of North America (2004), Atlas of Laser Applications in Dentistry, and Principles and Practice of Laser Dentistry. He has had articles published on laser dentistry in the ALD publications Wavelengths, Journal of the Academy of the Academy of Laser Dentistry, and Journal of Laser Dentistry; European Archives of Pediatric Dentistry; Journal of Human Lactation; Clinical Lactation; Journal of Orthodontics; General Dentistry; Journal of the Canadian Dental Association; and many others. He has written two books: SOS 4 TOTS, a text on the treatment of lip- and tongue-ties, and an Atlas of tongue- and lip-ties. He has been involved in the development and introduction of the isotopic Carbon Dioxide laser operating at 9300 nm known as Solea, developed and manufactured by Convergent Dental, a United States company.  
**Disclosure:**  
Dr. Kotlow has assisted in the development of a variety of laser products, including Innovative Optics (laser glasses), T4M (videos and webinars), Schick (Sirona digital radiography), and Isolite. He is a modest investor in the development of the Solea 9300-nm all-tissue CO2 laser and as such is on Convergent Dental’s professional dental advisory board and a beta tester the Solea laser. He receives an honorarium or supplies for his participation.  
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**Ed Kusek, DDS**  
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Dr. Kusek is a 1984 graduate of the University of Nebraska College of Dentistry. He is a Diplomate of the American Board of Oral Implantology and Fellow of the American Academy of Implant Dentistry. He has Mastership in the Academy of Laser Dentistry and Academy of General Dentistry (AGD) and is a Recognized Course Provider for the Academy of Laser Dentistry. Dr. Kusek received his Lifelong Learning and Service Recognition from AGD in 2012. He is an adjunct professor at the University of South Dakota and has published numerous articles on implant and laser dentistry.  
**Disclosure:**  
Dr. Kusek is a consultant for Convergent Dental, Ultradent, and Straumann Dental Implants.  
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Larry Lieberman, DDS
Private Practice, Palm Harbor, Florida, USA

Dr. Lieberman is a graduate of the New York University College of Dentistry, and a Fellow of the Academy of General Dentistry, Academy of Osseointegration, and International Congress of Oral Implantologists. He maintains a private dental practice in Palm Harbor, Florida, and uses erbium, Nd:YAG, diode, and CO2 lasers. Dr. Lieberman is a graduate of the Aesthetic Advantage Institute, Misch Implant Institute, and Pankey Institute for Advanced Dental Education. He has received certifications in Invisalign® Technology and the PerioLase® MVP-7™ Nd:YAG Dental Laser. Dr. Lieberman is a member of the American Academy of Cosmetic Dentistry, American Academy of Aesthetic Dentistry, Academy of Laser Dentistry, Florida Dental Association, and a founding member of the Florida Academy of Cosmetic Dentistry and Gulf Coast Dental Outreach. He lectures on cosmetic dentistry, practice management, and lasers in dentistry.

Disclosure:
Dr. Lieberman is in private practice in Palm Harbor, Florida, and has no commercial relationships.

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Ann Liebert, PhD
Australasian Research Institute, Wahroonga, Australia

Dr. Liebert is a clinician/scientist and holds the position of Director of Photomolecular Research at the Australasian Research Institute at the San Hospital in Sydney and is an Adjunct Senior Lecturer, Department of Medicine, Sydney University. She was awarded her PhD in 2016 in the use of photobiomodulation in the treatment of cervicogenic headache and mechanisms of photobiomodulation. Her current research is focused on the molecular mechanisms of photobiomodulation and she is also currently in the process of implementing a number of clinical trials to assess the effectiveness of photobiomodulation to treat cervicogenic and migraine headache, to treat and circumvent cognitive decline (including Alzheimer’s disease), and to help prevent cardiac damage and cognitive decline following cardiac artery bypass graft surgery. A clinical trial has begun to assess the effect of photobiomodulation on Parkinson’s disease and laboratory experiments are in progress to investigate the effect of photobiomodulation on cell membranes, the gut, and oral microbiomes. Dr. Liebert has published a number of manuscripts on the mechanisms of photobiomodulation and presented at numerous international conferences. She has spoken at various international conferences in the past 5 years on the topics of translational research and the proteomics of PBM. She currently holds the position of vice-president of the Australian Medical Laser Association (AMLA) and has recently been appointed to the scientific advisory board of the World Association of Laser Therapists (WALT) and is in on the Global Research Steering Committee for the North American Association of Photobiomodulation Therapy (NAALT).

Disclosure:
Dr. Liebert has received a significant research grant from Parkinson’s South Australia, a not-for-profit organization that provides support and information to people living with Parkinson’s and other movement disorders. Dr. Liebert is married to the director of Irradia-Australia, a company that manufactures laser products.

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Lew Lim, PhD, MBA
Vielight Inc., Toronto, Ontario, Canada

Dr. Lim is the Founder & CEO of Vielight Inc., and has been recognized as leading the research and development of real-world photobiomodulation applications to improve brain functions. He has invested considerable resources into addressing Alzheimer’s disease, and is collaborating with other researchers in a number of clinical research studies that include Parkinson’s disease, traumatic brain injury, and autism. Among the nonclinical investigations, Dr. Lim is collaborating in studies involving meditation, and sports and mental performance. His degrees and diplomas cover engineering, neuroscience, natural medicine, and finance.

Disclosure:
Dr Lew Lim is the owner of Vielight Inc.

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Samuel Low, DDS, MS, MEd
University of Florida, Palm Coast, Florida, USA

Dr. Low is Professor Emeritus, University of Florida College of Dentistry, and Associate faculty member of the Pankey Institute with 30 years of private practice experience in periodontics, lasers, and implant placement. He is also a Diplomate of the American Board of Periodontology and past President of the American Academy of Periodontology. He is a current member of the Board of the Academy of Laser Dentistry and Pankey Institute. Dr. Low provides dentists and dental hygienists with the tools for successfully managing the periodontal patient in general and periodontal clinics and is affiliated with the Florida Probe Corporation. He was selected “Dentist of the Year” by the Florida Dental Association, Distinguished Alumnus by the University of Texas Dental School, and recipient of the Gordon Christensen Lecturer Recognition Award. He is a Past President of the Florida Dental Association and past American Dental Association (ADA) Trustee.

Disclosure:
Dr. Low receives significant compensation as an employee of Biolase. He also receives significant honoraria from Phillips, has significant ownership interest in Florida Probe, and receives significant compensation as a consultant for PerioScience. Biolase is contributing equipment for his workshop.

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Camille Luke has been practicing dental hygiene since 1992, having incorporated the laser into her daily practice in 2009. She is a former clinical lead for Pierce College Dental Hygiene Department in Lakewood, Washington, and adjunct faculty for Eastern Washington University Department of Dental Hygiene, Cheney, Washington. She currently serves as Chief Hygiene Officer for a regional dental group and practices clinical hygiene in Tumwater, Washington. Ms. Luke has presented multiple continuing education courses in western Washington on topics specific to dental hygiene. Her recent experience has been mentoring and coaching dental hygienists in multiple practices around Puget Sound. She works with them in-office to develop a comprehensive wellness program in their individual dental hygiene departments, utilizing the diode laser as a standard of care. She also develops and presents continuing education programs to support other areas of personal and professional growth. Mrs. Luke is an active member of American Dental Hygienists’ Association, the American Academy of Oral Systemic Health, the Academy of Laser Dentistry, and an affiliate member of the Academy of General Dentistry.

**Disclosure:**
Ms. Luke works in private practice in Tumwater, Washington, and has no other commercial relationships.

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Jeri-Anne Lyons, PhD  
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Dr. Lyons completed her B.S. in Medical Technology from the University of Wisconsin-Stevens Point in 1989. She earned her PhD in Microbiology/Immunology from the Medical College of Wisconsin in 1997 studying the role of immune cell migration into the central nervous system in an animal model of multiple sclerosis (MS). She was a fellow of the National Multiple Sclerosis Society from 1997-2000, studying the role of B cells in MS pathology. Dr. Lyons joined the faculty of the Department of Biomedical Sciences at the University of Wisconsin–Milwaukee (UWM) in 2003. She is currently Professor and Associate Dean for the College of Health Sciences at UWM. Her current research interests include investigation of near-infrared light as an adjunct therapy for the treatment of MS.

Dr. Lyons is an internationally recognized expert on the role of the immune response in the pathogenesis of MS, and an internationally recognized expert on photobiomodulation therapy for the treatment of multiple sclerosis and the biological effects of photobiomodulation therapy in human and mouse systems.

**Disclosure:**
Dr. Lyons has received modest research support and instrumentation from Quantum Biomedical Devices, Inc., and Multi Radiance Medical, but they did not otherwise contribute to this presentation. She has received funding to support research from the National Multiple Sclerosis Society, but they did not otherwise contribute to this research. Dr. Lyons has received research funding from the UWM College of Health Sciences and the University of Wisconsin-Milwaukee, but they did not otherwise contribute to this research.

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Dr. Mastis received her dental degree from the University of Illinois College of Dentistry. She has been using a wide range of different laser wavelengths in her private practice for two decades. She has achieved Advanced Proficiency as well as recognition at the Mastership level through the Academy of Laser Dentistry (ALD). She served as the ALD Laser Safety Committee Chair for 5 years and was the General and Scientific Sessions Chair for the 2014 ALD Annual Conference. She served as co-chair of ALD’s Education and Certification Committees (2014-2017). Dr. Mastis currently serves as President of the ALD Executive Board.

**Disclosure:**
Dr. Mastis has reported no commercial affiliations or personal conflicts of interest.

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For over 20 years, Mr. McKay has traveled the world as a corporate trainer, presenter and advisor. He began working with Legally Mine to promote asset protection and tax reduction to health and business professionals, helping numerous people protect their assets and reduce tax liabilities.

**Disclosure:**
Mr. McKay is a consultant and speaker for Legally Mine.

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Andrew Mester, MD  
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Endre Mester, MD, was professor of surgery at the Semmelweis Medical University in Budapest, the fourth physician publishing on laser applications in medicine, and the inventor of Laser Bistimulation. His two sons, Andrew Mester, MD, otolaryngologist, and Adam Mester, MD, radiologist, were close co-workers in both the basic science and clinical studies of Endre Mester in the low-power laser investigations. Andrew received his MD and started his Otolaryngology residency program at the age of 25 at the Semmelweis Medical University in 1977. After passing his Otolaryngology Board exam in 1981, he completed a Pediatric Otolaryngology Fellowship followed with assistant professorship at the Semmelweis University. At the same time he was working at the Laser Research Center of the Postgraduate Medical University in Budapest (1977-86). Andrew had fellowships in London, England (1978) and at the Karolinska Hospital in Stockholm (1980). He received a one-year fellowship award from the University of Pennsylvania and it took five years for the communist authorities to issue him an exit visa from Hungary. Eventually in 1986 he was able to start his research fellowship and then assistant professorship in Philadelphia. He did extensive research in the Otolaryngology Department and Smell and Taste Center at the University of Pennsylvania, studying neural regeneration of the olfactory epithelium and laser biostimulation. He was granted a National Research Service Award and spent 9 months at the University of California-Los Angeles (1991-92). Andrew decided to return to Otolaryngology practice and did a five-year residency program at Boston University (1992-97). After finishing this program, he joined the Sansum Clinic in Santa Barbara, California, where he is practicing as a Board Certified Otolaryngologist. Andrew has extensive experience in laser biostimulation with publications, lectures, grants, and numerous awards.

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Mr. Millman has been advising high-net-worth families since 1997, with a focus for private clients on financial planning, investment strategy, asset allocation and portfolio design. He is also a Chartered Retirement Planning Counselor, having earned the CRPC® designation in 2008 and holds the AIF® (Accredited Investment Fiduciary) designation from the Center for Fiduciary Studies, signifying specialized knowledge of fiduciary responsibility and the ability to implement policies and procedures that meet a defined standard of care.

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Jeanette Miranda received her associate degree in dental hygiene from Indiana University South Bend (IUSB) and her bachelor degree in dental hygiene from Minnesota State University Mankato. She has practiced dental hygiene for over 35 years in four states and was a clinical hygiene instructor at IUSB. She has attained Standard Proficiency and Fellowship status in the diode laser with the World Clinical Laser Institute; Standard Proficiency, Advanced Proficiency and Mastership status with the Academy of Laser Dentistry; and Dental Hygiene Implant Certification through the International Congress of Oral Implantologists. Presently, Jeanette is employed as a clinical hygienist, serves the Academy of Laser Dentistry as co-chair of the Communications Committee and chair of the Auxiliary Committee. She is a past-president of the South Dakota Dental Hygienists’ Association and lectures on topics including dental laser, dental implants, and human papillomavirus (HPV).

Disclosure:  
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Saadia Mohammed, DDS  
Palm Beach Pediatric Dentistry, Boca Raton, Florida, USA  
Dr. Saadia has been in private practice since 1998 with a fellowship at Yale New Haven Hospital. She is a Board-certified Pediatric Dentist. She received her pediatric dental specialty training at the University of Connecticut and spent a year doing her Fellowship in Pediatric Dentistry at Yale New Haven Hospital and Children’s Medical Center in Hartford, Connecticut, with the Craniofacial team there. In addition, Dr. Mohammed spent a year at Mount Sinai Medical Center, Miami Beach, in general practice residency. During her dental schooling at New York University, she was awarded the Dean’s Research Award and was in the Honors Clinic. She is a member of the Academy of Breastfeeding Medicine, American Academy of Pediatric Dentistry, American Academy of Pediatrics, International Affiliation of Tongue-tie Professionals, the Academy of Applied Myofunctional Sciences, and Academy of Laser Dentistry. She is also a fellowship-certified Biolase trainer and a certified myofunctional therapist. Dr. Saadia can treat lip-ties and tongue-ties painlessly and quickly in her office, using advanced laser technology that offers exceptional results and speeds healing without the need for pain medication. Dr. Saadia believes in evidence-based patient-specific protocol (EBPSP).

Disclosure:  
Dr. Mohammed is in private practice in Boca Raton, Florida, and has no other commercial relationships.

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Gloria Monzon, RDH

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Ms. Monzon has enjoyed 30 years in the dental hygiene profession. Her passion is to make a difference in patients’ lives. She has used lasers since 1993 and earned Advanced Proficiency in diode and Nd:YAG lasers in 1998. In 1999, Gloria achieved University of California San Francisco (UCSF)/ALD Educator Status, and in 2002 she became an ALD Recognized Course Provider. She has served as Certification Examiner and Educator for the Academy of Laser Dentistry and World Clinical Laser Institute (WCLI). She has presented abstracts and performed as a speaker for the ALD and WCLI. With more than 20 years as an educator, she has lectured throughout the United States and internationally. Gloria heads Advanced Laser Hygiene Consulting where she receives an honorarium for conducting training.

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Rodrigo C. Mosca, DDS, MSc, PhD

Energetic and Nuclear Research Institute (IPEN/CNEN - SP) - CTR - Radiation Technology Center University of São Paulo (USP), São Paulo, Brazil

Dr. Mosca is a Dentist and Oral and Maxillofacial Radiology specialist through School of Dentistry, University of São Paulo, Brazil. He received his MSc, PhD, and Post-Doctoral credentials in Biotechnology through Energetic and Nuclear Research Institute (IPEN/CNEN - SP) - CTR - Radiation Technology Center, University of São Paulo (USP) which is the Strategic Center for Cancer Treatment belonging to the Science and Technology Ministry of Federal Government of Brazil. He is in the Post-Doctoral program in Oral Biology and Biomedical Engineering at the University at Buffalo, The State University of New York School of Dental Medicine. Dr. Mosca has been funded support from the International Atomic Energy Agency (IAEA) 2010-2016; National Commission on Nuclear Energy (CNEN) 2010-2014; Ministry of Science, Technology, Innovation and Communications (MCTIC) through the Universal Project (2010 and 2016), and the São Paulo Research Foundation - FAPESP (2015-present). He is the co-author of two textbooks, Radiologia Odontológica e Imaginologia (1st and 2nd editions); Tecnologias Endodônticas (2015). He received ALD’s Dr. Eugene Seidner Student Scholarship Award in 2018. Dr. Mosca’s research focus is on photobiomodulation therapy (PBM/T) and photodynamic therapy (PDT) for cancer treatment using ionization radiation through teletherapy and brachtherapy combined with YAG:Eu3+ and 2,2’-bipyridyl nanoparticles.

Disclosure:
Dr. Mosca has reported no commercial affiliations or personal conflicts of interest relative to this presentation.

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Dr. Nagai received his DDS from the Osaka Dental University, Japan, in 1987 and studied at the Harvard School of Dental Medicine as a clinical fellow from 1989 to 1992 when he practiced at the Massachusetts Veterans Administration Medical Center in 1990 and the Massachusetts General Hospital in 1991. He received his PhD from Tokyo Medical and Dental University in 2016. Dr. Nagai serves as a board member of the Japanese Society for Laser Dentistry, Academy of Laser Dentistry (2010-2016), Asia and Pacific Division of the World Federation for Laser Dentistry (WFLD), Laser Education International, Japanese Academy of Color for Dentistry, and Japan Society for Dental Anti-Aging. Dr. Nagai served as the general secretary of the 2016 WFLD JAPAN. He is a committee member of the Japan Academy of Esthetic Dentistry, Japan Society for Laser Surgery and Medicine, and Japan Association of Microscopic Dentistry, and president and chief instructor of the Japanese chapter of the Academy of Laser Dentistry. He was awarded the Leon Goldman Award for Clinical Excellence in Laser Dentistry in 2010 by the Academy of Laser Dentistry and the Excellent Presentation Prize of the Japanese Academy of Color for Dentistry in 2008. Dr. Nagai maintains a full-time practice in Tokyo, Japan.

Disclosure:
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Dr. Nakajima graduated in 1985 from Tohoku Dental College (now Ohu University) and in 1990 he acquired his DDS and PhD degrees from the Tsurumi Graduate School of Dentistry. In 1993, his dental office opened in Ōarai-machi, Ibaraki, Japan. He became a part-time lecturer at the Tsurumi University School of Dental Medicine in 1995. Dr. Nakajima incorporated his first laser (an Nd:YAG) for his clinic in 2003, and three years acquired Er:YAG, diode, and CO2 lasers. When he started with the laser procedures in 2004, he realized the effect of initiation. In 2005, he participated in the Academy of Laser Dentistry (ALD) conference, his first overseas academic society, and acquired Standard Proficiency at the same time. Subsequently he earned certification from the Japan Laser Dental Association. Dr. Nakajima began investigations with a superpulsed CO2 laser in 2008 and five years later became involved with the development of computer-controlled initiation of a diode laser tip. He also utilizes laser-patterned microcoagulation (LPM), similar to fractional laser irradiation, for treatment of periodontitis and peri-implantitis, obstructive sleep apnea syndrome, and cyst removal. He is currently exploring how lasers work on cells on a more molecular level, related to the concept of quantum biology.

Disclosure:
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Giovanni Olivi, MD, DDS
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Dr. Olivi is native of Rome, Italy, where he graduated cum laude in Medicine and Surgery (MD) and in Dentistry (DDS). In 2002 he achieved the postgraduate diploma in "laser dentistry" at the University of Florence; he received laser certification from the International Society for Lasers in Dentistry (ISLD) (2004), and Advanced Proficiency and Master status from the Academy of Laser Dentistry (2006-2009). Dr. Olivi is the 2007 recipient of the ALD Leon Goldman Award for Clinical Excellence. He is an active member and the scientific coordinator of the Italian Academy of Microscopic Dentistry (AIOM), active member of the Italian Society of Endodontics (SIE), Italian Society of Paediatric Dentistry (SIOM), and Academy of Laser Dentistry (ALD). He lectures on laser dentistry topics and is cooperating with several Universities worldwide. Dr. Olivi is professor and scientific coordinator of the "Laser Dentistry" proficiency and master courses at the Catholic University of Rome. He is the author of more than 70 peer-reviewed articles and several textbook chapters on dentistry topics, and the co-author of the books Lasers in Dental Traumatology (Edizioni Martina, 2010, in Italian); Pediatric Laser Dentistry: A User’s Guide (Quintessence, 2011, in English); Lasers in Restorative Dentistry: A Practical Guide (Springer, 2015, in English) and its Chinese edition; Lasers in Endodontics: Scientific Background and Clinical Applications (Springer, 2016, in English) and its Italian edition Laser in Endodontia: Ricerca e Applicazioni Clinica (Tecno Servizi, 2016). Dr. Olivi maintains his private practice in Endodontics, Restorative and Esthetic Dentistry in Rome, Italy.

Disclosure:
Dr. Olivi provides research support for Fotona and receives modest compensation for these activities.

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Dr. Olszewska received her DDS (1999), specialty in pediatric dentistry (2006), and PhD (2009) in dentistry from Poznan University of Medical Sciences, Poznań, Poland. Currently she is teaching Pediatric Dentistry and Pathology to 3rd-5th-year students of dentistry at Poznan University of Medical Sciences. A strong advocate for prophylaxis and dental education for parents and young patients, she involves her students in voluntary activities at orphanages, kindergarten classes, and pediatric oncology hospital departments. Her professional interests focus on developmental disorders affecting pediatric patients, oncoplastic patients, and chronic diseases in children in the aspects of oral health. Her current projects include use of laser in diagnostics of enamel hypomineralization and evaluation of remineralization therapy effects. In addition, Dr. Olszewska serves as voivodship consultant in pediatric dentistry for the Voivode of Greater Poland, and is a member of Polish Academy of Pediatric Dentistry, Dental Hygienists Association (scientific council), and ALD member since 2018. She was recently honored with an award for her contributions to research in dental hypersensitivity in young patients. She is an author of 43 published scientific articles in the field of pediatric dentistry and a lecturer at dental congresses in Poland.

Disclosure:
Dr. Aneta Olszewska lectures for Poznan University of Medical Sciences and is in private practice in Poznan, Poland. She has no other commercial relationships.

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Ken Piercy studied music at the University of Texas, and music and architecture at the University of Texas of Arlington. He is a Licensed Massage Therapist, and studied craniosacral therapy with the Upledger Institute with which he is a Diplomate Certified Therapist. Ken works with newborns, children with developmental disabilities (such as autism), and adults.

Disclosure:
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Ms. Pine works with smiles across the country and internationally, assisting in oral health in different ways. She is a seasoned licensed hygienist, so oral health is in her blood so to speak. She has had more than 25 years of coaching and training on OSHA safety and infection prevention strategies in dental and medical offices. She expanded her education to include Certification in Orofacial Myofunctional Therapy to assist people with their fatigue with head, neck, and shoulder pain that can be connected to their tongue during work days. Yes, you read it correctly, TONGUE! Pat goes above and beyond to educate other professionals during speaking venues across the country, informing parents and professionals about the benefits to infants and adults of keeping the CEO of the body, “the tongue,” in harmony with oral muscles. She feels the tongue-tie challenges have been camouflaged long enough, causing oral and physical imbalances. If infants through adults knew about the effects of frenums, they would say, “Please Release ME!” She is the author of the book Please Release Me – The Tethered Oral Tissue (TOT) Puzzle. Visit www.musclesinharmony.com for more information.

Disclosure:
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Dr. Romanos is a Professor of Periodontology and Director of Laser Education at Stony Brook University, School of Dental Medicine, and the Founder of its Laboratory for Periodontal-, Implant- and Phototherapy (LA-PIP). He is a Professor of Oral Surgery and Implant Dentistry at the University of Frankfurt, Germany. He is fully trained in Periodontics, Prosthodontics, and Oral Surgery in Germany and New York; Board Certified in Oral Surgery and Implant Dentistry in Germany; Diplomate of the American Board of Periodontology. Dr. Romanos served as Associate Dean for Clinical Affairs at Stony Brook University (2012-2014); Professor for Clinical Dentistry at the University of Rochester, New York (2007-2012); Professor and Director of Laser Sciences at New York University (2004-2007). He is a Fellow of the American Association for Dental Research, the Academy of Osseointegration, International College of Dentists, International Congress of Oral Implantologists, International Team for Implantology Foundation, American Society for Laser Medicine and Surgery, Greater New York Academy of Prosthodontics, and International Academy for Dental Facial Esthetics. He serves on the Editorial Board of various peer-reviewed journals; has published more than 350 articles and 5 books; presented over 500 presentations worldwide; participates in international scientific collaborations and teaching activities globally; and has lectured in more than 50 countries. Dr. Romanos was awarded the Academy of Laser Dentistry’s T.H. Maiman Award Recipient for Excellence in Dental Laser Research in 2016.

Disclosure:
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Dr. Ross holds Advanced Proficiency from the Academy of Laser Dentistry (ALD) and is an ALD Recognized Course Provider. In addition he is an ALD board member and Chair of the Membership Committee. He has been using photobiomodulation in his practice since 1993 and has given over 200 lectures on the subject in North America and internationally. Dr. Ross has published 10 articles, has written chapters in 2 laser textbooks, and does peer review for 4 laser journals.

Disclosure:
Dr. Ross receives modest compensation for lecturing for Zolar lasers and their distributors.

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Cozy Ruan is a current fourth-year dental student at the University of Tennessee College of Dentistry. Her interest in laser dentistry and its therapeutic applications began with a didactic lecture given to her class in her second year. Since then, she has been interested in the pursuit of practical application of laser therapy and its role as a less invasive alternative to dental surgery. She became involved in photobiomodulation research in her third year.

Disclosure:
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Mary Lynn Smith is a registered dental hygienist, working clinically since 1994. Practicing with lasers daily since 2000, she has persisted in advancing her knowledge and expertise. Mary Lynn holds both Standard and Advanced Proficiencies in multiple laser wavelengths. She is currently a Recognized Course Provider with the Academy of Laser Dentistry. In April 2018, Mary Lynn was awarded ALD’s Leon Goldman Award for Clinical Excellence in laser dentistry. She has contributed to the dental community through speaking at national conferences and small groups on care of implants, periodontal therapies, laser-assisted hygiene techniques and principles. She also provides consulting in private practices. She has authored published articles and a chapter on laser-assisted non-surgical periodontal therapy in the textbook Principles and Practices of Laser Dentistry by Dr. Robert Convissar. Her passion for sharing her knowledge, developing other clinicians’ skills, and inspiring them to work with excellence is evident in her teaching. Mary Lynn currently resides in McPherson, Kansas, where she is employed at McPherson Dental Care. She is the owner and CEO of Aspiring Dental Hygiene, LLC.

Disclosure:
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Dr. Sun graduated from the University of Southern California School of Dentistry in 1981. She maintains full-time comprehensive cosmetic practice and dental laboratory in the Beverly Hills, California, area. Dr. Sun advocates education, currently holding Master and Educator status with the Academy of Laser Dentistry (ALD), as well as sitting on ALD’s Board of Directors. She was the first woman to receive Accredited Fellow status with the American Academy of Cosmetic Dentistry (AACD). She is also a Master of the Academy of General Dentistry and a Master of the International Congress of Oral Implantologists (ICOI). Dr. Sun advocates for airway health and orofacial myofunctional therapy as the method to achieve and maintain a healthy airway.

Disclosure:
Dr. Sun owns a private practice in Los Angeles, California and has no other commercial relationships.

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Mr. Sven is a Founder and Master Technician at Sventech Inc. He serves as a consultant to manufacturers on new products. He is also a developer of new lasers for the dental industry.

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After purchasing his practice, the Pennsylvania Center for Dental Excellence, in Philadelphia in 2007, Dr. Tau solely used the power of the Internet to help grow his new patient base and went against the traditional way of marketing one’s dental office. He lectures nationally and internationally on Internet marketing, social media, and reputation marketing and its ability to make your dental office more visible and credible. He is also the General Manager of the Dental Division for Birdeye, a reputation marketing platform, and founder of iSocial Digital, a consulting firm that helps dentists develop a comprehensive online marketing plan. His content-rich, engaging seminars allow him to bring his first-hand experiences to his audiences.

Chosen as one of the top leaders in dental consulting by Dentistry Today, Dr. Tau is a dentist, consultant, speaker, practice owner, and podcaster. Few professionals within the dental industry have the level of expertise, knowledge, and passion for the field. He has traveled the country educating dental professionals to help them succeed in growing their practice, reigniting their passion for dentistry, and navigating the fast-changing nature of the job. Be sure to check out his podcast, The Raving Patients Podcast, available on iTunes.

Disclosure:
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Ms. Valk is a current third-year dental student at the University of Tennessee Health Science Center in Memphis, Tennessee. She was first introduced to laser dentistry through a lecture by her Principle Investigator, Dr. Christopher Walinski. Currently while working as a student-dentist in the clinic, she hopes to use her research background with lasers to be able to treat patients under the supervision of mentors at the school. Upon graduation in May of 2020, she plans to incorporate lasers into her future dental practice.

Disclosure:
Ms. Valk is a student at University of Tennessee Health Science Center College of Dentistry and has no commercial relationships.

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As a licensed attorney and portfolio manager, Mr. Veneroso focuses his practice on the spectrum of complex wealth issues that face high-net-worth investors, institutions, and foundations. His comprehensive wealth management approach includes creating sound financial plans and implementing these plans to a portfolio that is specifically aligned to the client’s best interest. As a fiduciary, Mr. Veneroso only works in a capacity which helps ensure that every portfolio and plan is serving the best interest of the client.

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Dr. Via is a 1985 graduate of The Hebrew University - Hadassah School of Dental Medicine, Jerusalem, Israel, and served in the Air Force as a dentist. He was elected as outstanding dentist and officer of the Israel Defense Forces (IDF) medical corps by the chief medical officer. In 1994 Dr. Via completed his Residency in Periodontics, Department of Periodontology, The Hebrew University - Hadassah School of Dental Medicine. Since 1996 he has maintained a private practice limited to periodontics and implantology in Rishon LeZion, Israel. Dr. Via has served as a chairman of the Israel Society of Periodontology and Osseointegration; member of the sub-committee of Periodontology of the Dental Scientific Council; and Head of the Internship Program in the Department of Periodontology at the Center of Dental Medicine Sheba Medical Center, IDF.

Disclosure:
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Ms. Wallace is a laser educator for the Academy of Laser Dentistry, and has achieved her Mastership with ALD. She is currently the co-chair for ALD’s Regulatory Affairs Committee and serves on several other committees. Angie was the 2014 recipient of the John G. Sulewski Distinguished Service Award from the ALD. She has been recognized as an international speaker and provides in-office laser certification courses.

**Disclosure:**  
Ms. Wallace provides laser training and educational consulting through her company Laser Hygiene, LLC. Angie reports modest earnings from tuition for courses. She receives support with lasers for her educational programs from several laser companies. She also speaks for King Dental and Biolase and receives honoraria.  

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Dr. Whitney is double-board certified in Family Medicine and Sports Medicine. He graduated from Jefferson Medical College in Philadelphia and completed his family practice residency at David Grant USAF Medical Center, Fairfield, California. He served as a physician in the United States Air Force before joining the University of Pennsylvania Health System, where he established his concierge medical practice, Revolutionary Health Services, in 2003. A leading national advocate of bridging the “oral-systemic gap” between dentistry and medicine, Dr. Whitney has been published in leading print and online dental trade journals, including Dentistry Today, Dentaltown, Journal of Cosmetic Dentistry, DentistryIQ.com and Dentalcompare.com. He also authored a four-part online CE course “A Comprehensive Review of Vascular Disease” for PennWell’s INeedCE.com continuing education portal. Dr. Whitney is active as a keynote speaker, lecturer, panelist and webinar presenter. He was recognized as one of Dentistry Today’s “Top CE Leaders in Dentistry” in 2015, 2016, and 2017. In medicine, Dr. Whitney served on the Board of Directors of the American Academy of Private Physicians, the national trade organization of concierge practices from 2007-2013, and was Vice-President during his final year. He was twice named a “Top Doc” in Concierge Medicine by Concierge Medicine Today, the only physician in Pennsylvania to earn that distinction. He was named “Top Doc” in Philadelphia by Philadelphia Magazine in 2016, 2017, and 2018.

**Disclosure:**  
Dr. Whitney received an honorarium to speak for PerioProtect in March 2018. He has spoken and conducted webinars for NextLevel Practice, receiving reimbursement for travel.

Contact Dr. Whitney by e-mail at cwhitneymd@gmail.com.
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