

CONFERENCE GUIDE



28th Annual Conference and Exhibition

Dental Laser Solutions Sharing and Collaborating Beyond Borders

Mission of Our ALD Conference

To provide attendees with a positive educational 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 programs, 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.

Welcome to ALD 2021!

I am delighted to welcome you to the Academy of Laser Dentistry's 28th Annual Conference. This is our first-ever virtual and on-demand conference keeping in line with the restrictions brought upon us by the current climate. I trust that this will be just as effective as in-person learning, and we can still network with the online platforms. If there is anything else we can do to help make your conference experience better, please let us know. This is a new format for us all!

Our theme for 2021 is "The Year of the Global Collaborations."

"SHARE THE LIGHT" has made us think outside the box to bring all of us together as friends and colleagues who share the same passion – caring for our patients. The concept is multidisciplinary to cater to today's needs for everyone, and we cover routine to controversial subjects with multiple live panel discussions. Disciplines include general dentistry, periodontics, implantology, esthetic dentistry, endodontics, pediatric dentistry, dental hygiene, and practice management.

Hot topics include treatment of peri-implantitis, cancer-related oral mucositis, and sleep-disordered breathing. Presentations feature digital dentistry, facial esthetics, cutting-edge research, new lasers, and photobiomodulation. The business of dentistry will take us through safer and better COVID-coping technology, and an understanding of billing and coding for everyday use. We have over 20 hours of CE available to you, at the time and place that suits your needs.

To facilitate your virtual and on-demand experience at your preferred time and convenience, we also have some videos and live "get to know the virtual platform" social media activities just prior to the conference. These orientation events will be recorded for later reference as you need them.

On behalf of the entire conference team, I thank you for joining us and making this a special event in 2021!

Arun Darbar, BDS, DGDP(UK) President of the Academy of Laser Dentistry

Academy of Laser Dentistry 28th Annual Conference & Exhibition Academy of Laser Dentistry - General Membership Meeting April 9, 2021 4:00 pm – 4:45 pm | Conducted Virtually

The Academy of Laser Dentistry will conduct its general membership business meeting on April 9, 2021 during the 28th Annual Conference of the Academy of Laser Dentistry. ALD President Dr. Ed Kusek will provide an update on the Academy programs and recognize our leaders. Dr. Arun Darbar, President-Elect and Nominations Chairman, will conduct the election of Board Members and Officers. 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. Members are provided this agenda by email.

Agenda

- 1. Call to Order, Dr. Ed Kusek , President
- 2. Establish Quorum, Gail Siminovsky, CAE, Executive Director
- 3. Presidential Remarks
- 4. Academy Report
- 5. Recognition of Leadership
- 6. Dr. Keith Brewster
- 7. Dr. Charles Carpenter
- 8. Dr. Gerry Ross
- 9. Dr. Grace Sun
- 10. 2019 President Dr. Mel Burchman

Election of Officers and Board of Directors, Dr. Arun Darbar, Nominations Chair

Members receive an email with links to cast a vote for the nominated members.

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

Nominated Officers 2021-2022

- Dr. Sam Low, President-Elect
- Dr. James Carreiro, Treasurer
- Dr. Walid Altayeb, Secretary

Nominated Directors-at-Large

- Dr. Mountaha Al Hage 2021-2024
- Lynn Atkinson, RDH 2021-2024
- Dr. Juliana Barros 2021-2024
- Dr. Blake Cameron 2021-2024
- Dr. Nancy Fitzgerald 2021-2022*
- Dr. Craig Sanford 2021-2024

Dr. Altayeb's nomination as an Officer.

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

- Dr. Arun Darbar, President
- Dr. Ed Kusek, Immediate Past President

Continuing Directors-at-Large

Dr. Laura Braswell 2019-	-2022 1 st term
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Board Advisors

- Dr. Donald Patthoff, Journal of Laser Dentistry Editor, Appointed, non-voting
- Gail Siminovsky, CAE, Executive Director, non-voting

New Business

- President's Remarks, Dr. Arun Darbar
- Presidential Recognition of Dr. Ed Kusek

Adjournment

st Dr. Fitzgerald is nominated to serve the last year in the seat vacated by

GIVING FUTURE

It's an exciting time for ALD. Our impact on students and researchers has increased significantly through your donations and the growth of ALD's Dr. Eugene Seidner Student Scholarship and Grants Program.

In 2004, our goal was \$100,000. In 2012 we reached that goal. And 6 years later research grants were added. Today the funds are safeguarded to be used for future research and student scholarship.

Since inception the Program has awarded \$120,000 to honor 36 dental students in 6 countries.

Since 2018, in just 3 years, the Program has provided an additional \$56,000 is research grants to 6 researchers at 4 universities.

In 2021 we honor 5 young dentists.

The Tokyo Medical and Dental University Department of Periodontology, Graduate School of Medical and Dental Science received \$18,000 in 2019 for Dr. Sayaka Katagiri's research and \$9000 in 2021 for Dr. Yujin Ohsugi's research, both mentored by Dr. Akira Aoki

The University of Texas Health School of Dentistry at Houston Department of Periodontics and Dental Hygiene received \$11,334 for Dr. Marcos Garcia's research, mentored by Dr. Juliana Barros and Dr. Shalizeh Patel

This year's Student Scholars are

Dr. Edmond Rexha who studied at Stonybrook School of Dentistry in New York, mentored by Dr. Chris Walinski and 4th-Year Dental Student Wenbin Feng attending Touro School of Dentistry in New York, mentored by Dr. Georgios Romanos.

Student Scholars receive a small cash award plus travel and hotel accommodations typically. Since this year's meeting is virtual, each student received a \$400 cash award and a promise to cover travel and accommodations for a future in-person ALD Annual Conference.



More than 175 people have invested over \$237,000 to support laser education and research. ALD plans to offer research grants for many more years thanks to the generous donations.

Support the program and these young researchers on April 8, 2021 at 6:00 pm – 7:00 pm Eastern Daylight Time for the 28th Annual Conference research track.

We salute our Dr. Eugene Seidner winners.

GENERAL INFORMATION

Conference Design and Educational Methods

The Academy of Laser Dentistry's 28th Annual Conference 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, and demonstration activities. The theme for 2021 is *"The Year of Global Collaboration"*.

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, esthetic dentistry, restorative dentistry, pediatric dentistry, implantology, and the business of dentistry. By means of pre-recorded lectures and live panel discussions , 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 field of dentistry.

Virtual Learning Format and Availability On-Demand

The Conference format is virtual. ALD is using an interactive platform called Map Dynamics that allows the full program to be easily accessed by attendees. The content has been pre-recorded and the speakers will be present virtually April 8-10 to answer questions utilizing the Zoom Chat feature and the Map Dynamics Discussion Board feature. After the conference airs live on April 8-10, attendees will be able to access content until the end of this calendar year.

Event Technology

Attendees have varying levels of comfort with technology, therefore ALD provides instructions on:

- Where attendees can go for technical help and any technical tips
- How to use any chat features
- Where they can ask questions during the session and after the session
- Where any in-session activities might appear (e.g., polls)
- Other ways to participate: activities, contests, social media tags, etc.

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 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. The amount of CE credit to be granted is determined according to the individual educational content of each presentation and course.

Up to approximately 30 CEUs are possible:

Thursday	10.33 Lecture
Friday	11.25 Lecture
Saturday	8.75 Lecture

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 platform, ALD website, conference program, and shared in opening slides for individual speakers 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.

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 wellbeing 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. They do not necessarily represent the views of the Academy of Laser Dentistry. ALD is not responsible for the opinions expressed by the presenters 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 $\overline{\mathbf{M}}$ cacy 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.

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28th Annual Conference and Exhibition Dental Laser Solutions

Sharing and Collaborating Beyond Borders

AWARDS

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2021 ALD Awards Recipients

Many of the members of the Academy of Laser Dentistry (ALD) submerge themselves in the dynamics of laser dentistry on a day-byday 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 four awards to celebrate the hard work of its members:

- 1. the T.H. Maiman Award for Excellence in Dental Laser Research
- 2. the Leon Goldman Award for Clinical Excellence,
- the John G. Sulewski Distinguished Service Award for Outstanding Commitment and Contributions to the Academy,
- 4. the Dr. Glenda Payas Outstanding Educator Award that is presented this year for the first time for lifelong leadership excellence in education globally.

In 2021 ALD honors the commitment of four outstanding individuals, each contributing to making our world a kinder, gentler place.

T.H. Maiman Award for Excellence in Dental Laser Research



James Carroll, AMInstP, FRSM CEO, THOR Photomedicine Ltd, Chesham, Buckinghamshire, United Kingdom

About James Carroll

James Carroll has been working on photobiomodulation for 34 years and is a recognized authority on photobiomodulation dose, dose rate effects, and the measurement and reporting of treatment parameters. He has written or co-authored 24 academic papers and co-authored four books on the subject.

His most recent appointments include: Co-Chair of the Biomedical Optics Society Conference on Photobiomodulation Mechanisms; Board Member of the World Association for Photobiomodulation Therapy; Fellow of The Royal Society of Medicine.

Through his company THOR Photomedicine, he is working with 36 medical institutions across the world, including Harvard Medical School, St. Jude Children's Hospital, and the UK National Health Service (NHS), on photobiomodulation treatment for a range of conditions such as traumatic brain injury, the side effects of cancer treatments, and managing acute and chronic pain.

James has presented at the United Nations Global Health Impact Forum on Photobiomodulation and to Congress on photobiomodulation treatments that could help solve the opioid crisis.

ALD honors James Carroll with ALD's highest research honor, the T.H. Maiman Award for Excellence in Dental Laser Research.

Acceptance by Mr. Carroll

I am grateful to the Academy of Laser Dentistry and hundreds of scientists and doctors and their patients for this special moment in my life. We are all indebted to Ted Maiman for inventing, building, and patenting the world's first laser in 1960.

Just seven years later, Professor Endre Mester discovered that low-intensity laser treatment improves the speed and quality of tissue repair via a mechanism that today we call Photobiomodulation or PBM for short. We now know that PBM also reduces inflammation and reduces pain. There are early indications that PBM helps improve the function of the Central Nervous System and for debilitating conditions such as macular degeneration, brain injury, dementia, and Parkinson's disease.

I first heard about PBM in 1987 from Endre's son, Adam Mester, who presented evidence of 1361 patients successfully treated with PBM at his father's hospital. Right then, I knew PBM should be in every hospital in the world, and I have been working to achieve that goal ever since. PBM has now been validated in 700 randomised controlled clinical trials on humans, and my THOR products have delivered over 30 million treatments.

A patient named Judith wrote to me saying:

"30 years ago, I was hit by a car which broke my collarbone and injured my shoulder. Decades later, the pain still required eight anti-inflammatory pills every day. Eventually, I could not use my arm.

But PBM therapy saved my life.

I no longer need pain killers because I live pain-free, so please thank everyone who helped bring this technology to people like me. It has been a miracle!"

It's letters like that which inspired me to establish the goal of having PBM accepted as a first-line medical treatment, for 100 different diseases, in 100 different countries, by the time I'm 100 years old.

PBM is like something out of science fiction, but Ted Maiman and Endre Mester made it a reality, and I look forward to continuing this quest with all of you as we make PBM a global standard of care.

Contact James Carroll by e-mail at james.carroll@thorlaser.com.

The T.H. Maiman Award is presented for excellence in dental laser research. The first laser was developed by Theodore H. Maiman in 1960. In 2021, James Carroll is honored with the T.H. Maiman award for research excellence in light therapy. The candidates are required to provide supportive documentation displaying the candidates' exceptional dental laser research. The criteria for the Maiman Award for excellence include publication in peer-reviewed journals as first or second author. This honor is not given every year. Mr. Carroll joins a prestigious community of past recipients.

Dr. Joel White 1993 Dr. Lynn Powell 1995 Dr. Richard Blankenau 1996 Dr. Terry D. Myers 1998 Dr. Peter Rechmann 1999 Dr. Frederick Parkins 2000 Dr. Akira Aoki 2001 Dr. John Featherstone 2002 Dr. Craig Gimbel 2003 Dr. Linda Otis 2006 Prof. Raimund Hibst 2008 Prof Dr. Daniel Fried 2009 Dr. Wayne Selting 2011 Dr. Sebastiano Andreana 2012 Dr. Georgios Romanos 2016 Dr. Shalizah Patel 2019 Dr. Juliana Barros 2019 James Carroll 2021

Leon Goldman Award for Clinical Excellence



Grace Sun, DDS, MALD, MAGD, MICOI, FAACD Private Practice, Los Angeles, California, USA

About Dr. Sun

Dr. Sun has practiced comprehensive and restorative dentistry in Beverly Hills since 1983 and is responsible for many healthy beautiful and happy smiles. Her prestigious accreditations include Master of the Academy of Laser Dentistry, Accredited Fellow of the American Academy of Cosmetic Dentistry (the Academy's first female fellow), Master of the Academy of General Dentistry, Master of the International Congress of Oral Implantologists, and a Senior Instructor with the International Association for Orthodontics. An early adopter of lasers in dentistry, Dr. Sun has integrated lasers of multiple wavelengths, including low-level laser therapy, into her practice since 1997. She co-authored the first academic journal article on low-level lasers in the *Dental Clinics of North America* in 2004.

It is an honor to recognize Dr. Grace Sun with The Leon Goldman Award, ALD's highest recognition of clinical excellence.

Acceptance by Dr. Sun

What a humbling experience this has been! I have been fortunate, throughout my career, to know and learn from many teachers, mentors, colleagues and peers, who have enabled me to deliver the best care possible for my patients and for my community. I am proud to be a member of the Academy of Laser Dentistry. I am honored and humbled to receive this Leon Goldman Award for Clinical Excellence. Thank you.

Contact Dr. Sun by e-mail at DrSun@sundds.com.

The Leon Goldman Award is presented for clinical excellence. Dr. Goldman was the first physician to report on laser exposure to a vital human tooth. In 2020 Dr. Grace Sun is honored with the Leon Goldman Award for Clinical Excellence. The candidates are required to provide supportive documentation displaying the candidates' exceptional clinical work. The criteria for the Goldman Award for clinical excellence include: ALD membership, Advanced Proficiency Certification, clinical presentations annually, and recognized clinical excellence using lasers in dentistry in peer-reviewed journals. Dr. Sun joins a prestigious community of past recipients.

Dr. Kim Kutsch 1993 Dr. Robert Pick 1995 Dr. Steven Parker 1998 Dr. Donald J. Coluzzi 1999 Dr. Robert E. Barr 1999 Dr. Janet Hatcher Rice 2000 Ms. Nora M. Raffetto, RDH 2001 Dr. Duane H. Beers 2002 Dr. Gabi Kesler 2004 Dr. Glenn van As 2006 Dr. Frank Yung 2007 Dr. Giovanni Olivi 2007 Dr. Stu Coleton 2009 Dr. Shigeyuki Nagai 2010 Dr. Giuseppe Iaria 2011 Dr. Mel Burchman 2012 Dr. Larry Kotlow 2014 Dr. Fred Margolis 2014 Dr. Claus Neckel 2015 Dr. Gerry Ross 2016 Dr. Beatrijs Deruyter 2017 Dr. John Graeber 2018 Mary Lynn Smith, RDH 2018 Dr. Nuran Çulcuoglu 2019 Dr. Grace Sun 2021

John G. Sulewski Distinguished Service Award for Outstanding Commitment and Contributions to the Academy



Ana Maria Triliouris, DDS Private Practice, Merrick, New York, USA

About Dr. Triliouris

Lasers became her passion in 1991 and Dr. Triliouris has been using lasers in her practice ever since in Merrick, Long Island, New York. She was among the early pioneers that incorporated lasers in the 1990s. Together a small group met often to learn about laser technology and later founded an organization that later became the Academy of Laser Dentistry (ALD). Dr. Triliouris served as the first editor of *Wavelengths*, a precursor of *the Journal of Laser Dentistry*, as the Ethics Committee Chair for many years, as a member of the Board and the Chair of the Dr. Eugene Seidner Scholarship Fund for many more years. One highlight was in 2011 when she served as the ALD President. Additionally, as the Dr. Seidner Scholarship Fund became successful and permanent during her tenure and because of the work she contributed in fundraising and networking, the Seidner Board of Trustees was able to add Research Grants to the program in 2018.

Dr. Triliouris continues to be active in the ALD, volunteering now as Chair of the Dr. Eugene Seidner Student Scholarships and Research Grants Program. Since the program's inception in 2004, ALD has presented \$120,000 in students scholarships to 36 students in 6 countries, and \$56,000 in 3 research grants to 6 researchers at 4 universities globally. In addition, The Seidner Silent Auction has raised \$31,000 with over 96 items donated. The \$153,000 Scholarships and Research Grants fund continues to grow.

It is an honor to recognize Dr. Ana Triliouris with the 2021 John G. Sulewski Distinguished Service Award for Outstanding Commitment and Contributions to the Academy

Acceptance by Dr. Triliouris

I would like to thank everyone at the Academy of Laser Dentistry for honoring me with this award. I would especially like to thank those that helped me through the years as we worked to accomplish our goals with the *Journal of Laser Dentistry* first, with the Dr. Eugene Seidner Student Scholarship Fund second, then with developing academic grants in the last few years, and finally with working together with and in the ALD Ethics Committee to try to avoid and confront conflict of interest and other ethical issues. These are just a few of those individuals: Terry Myers, Gene Seidner, Alan Goldstein, David Roshkind, Don Patthoff, Glenda Payas, John Featherstone, and of course Gail Siminovsky.

They made all these years of work at this Academy lots of fun even as we worked so hard to accomplish our goals. I'm very proud of my contributions to the Academy of Laser Dentistry and of how we both grew and enjoyed success as lasers became a part of dentistry. They are now a tool that anyone that calls herself or himself a dentist should own. I accept this award with pride and I assure you that all these years were and will continue to be a source of satisfaction and gratification to me as I have helped and will continue to help the Academy to carry on its work of making lasers a very important part of dental education and dental practice.

Contact Dr. Triliouris by e-mail at amtdds@gmail.com.

The John G. Sulewski Distinguished Service Award is presented for outstanding commitment and contribution to the Academy. In 2021, Dr. Ana Triliouris is presented with the John G. Sulewski Distinguished Service honor. The Distinguished Service Award recognizes leadership and participation in the Academy far above the call of duty including Board of Directors service. Dr. Triliouris joins esteemed colleagues as honorees:

Dr. Stewart Rosenberg 1993 Dr. Scott Brundrett 1995 Mr. John Sulewski 1996 University of California, San Francisco 1997 Dr. David M. Roshkind 1998 Dr. Alan J. Goldstein 1999 Dr. William Siminovsky 2000 Dr. Stuart Coleton 2002 Dr. Stuart Coleton 2002 Dr. Donald Patthoff 2003 Dr. Tony Hewlett 2004 Dr. Joel White 2005 Dr. Donald Coluzzi 2006 Dr. Art Levy 2007 Dr. Lester Burman 2008 Dr. Dennis Pietrini 2009 Dr. Steven Parker 2010 Dr. Charles Rhodes 2011 Dr. Emile Martin 2012 Dr. Robert Convissar 2013 Ms. Angie Mott, RDH 2014 Dr. Mitch Lomke 2015 Dr. Glenda Payas 2016 Dr. Arun Darbar 2017 Dr. Scott Benjamin 2018 Dr. Walid Altayeb 2019 Ana Maria Triliouris 2021

The Dr. Glenda Payas Outstanding Educator Award



Dr. David Roshkind, DMD, MBA, FAGD, MALD Private Practice, West Palm Beach, Florida, USA

About Dr. David Roshkind

Dr. Roshkind has been involved in the dental field for over 45 years, and laser dentistry since 1990. He has held positions as President of the Academy of Laser Dentistry, Chairman of Regulatory Affairs, Chairman of Scientific Sessions, and Chairman of Certification. He has held appointments as Senior Clinical Instructor at the Institute of Laser Dentistry, a Certified Laser Educator, Member of the House of Delegates Florida Dental Association, Instructor at the University of Pennsylvania School of Dental Medicine, an Assistant Professor at Nova Southeastern University College of Dental Medicine, and an Assistant Professor at the University of Florida College of Dentistry.

Dr. Roshkind is a charter member of the Academy of Laser Dentistry, received the Academy's Outstanding Service Award in 1998, holds the Master of Laser Dentistry designation, and is an associate of Laser Education International, LLC. Dr. Roshkind has presented seminars, lectures, workshops, and has published locally, nationally, and internationally. Some of the venues include the annual sessions of the American Dental Association, Academy of General Dentistry, Fédération Dentaire Internationale, California Dental Association, Florida Dental Association, and The Greater New York Dental Meeting. He has practiced General, Cosmetic, and Laser Dentistry in West Palm Beach, Florida, for over 36 years and practiced for 8 years in Gainesville, Florida. Dr. Roshkind holds the following degrees and honors:

Cornell University – BA University of Pennsylvania School of Dental Medicine - DMD Wharton School - MBA Fellow of the Academy of General Dentistry Advanced Proficiency Laser Certification Master of the Academy of Laser Dentistry Certified Dental Laser Educator – University of California San Francisco

ALD honors Dr. David Roshkind as the inaugural recipient of the Dr. Glenda Payas Outstanding Educator Award.

Acceptance by Dr. Roshkind

I am deeply honored to be the first recipient of the Dr. Glenda Payas Outstanding Educator Award.

I began teaching the use of lasers in dentistry shortly after the dLase 300 Nd:YAG, the first surgical laser in the world designed specifically for general clinical dentistry. was cleared on May 3, 1990, by the U.S. Food and Drug Administration for use by dental practitioners. I had the good fortune to be in the first group of dentists in the United States to be taught and mentored by the late Dr. Terry D. Myers, the inventor of that first dental laser. After learning as much as was available about dental lasers at the time, and gaining some clinical practice, I became a Senior Clinical Instructor for the Institute for Laser Dentistry. In this position I had the distinction to teach and offer some of the first educational programs to train other dental clinicians in the U.S. and from around the world. I was given the opportunity to help develop the Curriculum Guidelines for Dental Laser Education which was used for decades as the standard in dental laser education. Additionally I introduced one of the first dental laser courses within a dental college for predoctoral students. After teaching now for more than 30 years, in venues of all varieties and sizes from 800 participants to one-on-one, I am proud to say that many of the outstanding and leading laser educators, authors, and researchers today were once students of mine.

It is my desire to dedicate this tribute and acceptance of my award to Dr. Terry D. Myers, my first dental laser teacher and mentor. Furthermore it is my wish that those whom I have had the privilege to help along the path of their dental laser education will continue to teach, mentor, improve, and advance the teaching of laser integration into clinical and academic dental education.

I wish to express my thanks to the Awards Committee for honoring me with the Dr. Glenda Payas Outstanding Educator Award.

Contact Dr. Roshkind by e-mail at DRoshkind@aol.com.

The Dr. Glenda Payas Outstanding Educator Award is presented for lifelong leadership excellence in education globally. This honor recognizes original research, years of educational instruction in multiple different educational environments from elementary school to postgraduate teaching, published articles, and distinguished volunteer leadership service that supports education globally. This honor is selected by the Dr. Eugene Seidner Student Scholarship and Research Grants Board of Trustees. **The 2021 inaugural honor of the Dr. Glenda Payas Outstanding Educator Award is presented to Dr. David Roshkind.**



Academy of Laser Dentistry 2021 Annual Conference



28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

SCHEDULE



Conference-At-A-Glace



PROGRAM SCHEDULE As of March 23, 2021

All Times are Eastern Daylight Time

Topics/Tracks



Thursday, April 8, 2021

Time	Title	Track/Topic
9:00-9:15 AM	Conference Opening & Welcome	
9:15-10:00 AM	Samuel Low, DDS, MS, MEd The New Standard of Care in Managing Peri- Implant Disease	Implantology
10:00-11:00 AM	Samuel Low, DDS, MS, MEd A "How to" Live Demonstration for the 5 Most Frequent Laser Uses	Demonstration Course Laser Applications
10:00-10:45 AM	Robert Miller, MA, DDS, FACD Treatment of Peri-Implantitis Using UVC Lasers	Implantology
10:45-11:30 AM	Robin D. Horton, BDS How Digital Technology Enables Safer and More Accurate Implant Planning and Computer-Guided Surgery *Sponsored by Nobel Biocare UK	Implantology
11:30 AM- 12:15 PM	Akira Aoki, DDS, PhD Er:YAG Laser-Assisted Comprehensive Periodontal Pocket Therapy (Er-LCPT)	Implantology Periodontology

12:15-1:15 PM	A Panel Discussion: Lasers in Treatment of Peri-Implant Disease: Benefits, Limitations, and Potential Risks Moderator - Walid Altayeb, DDS, MScD, PhD Panelists - Robin D. Horton, BDS; Samuel Low, DDS, MS, MEd; Robert Miller, MA, DDS, FACD	LIVE Panel Q&A Implantology, Periodontology, General Dentistry
1:15-3:00 PM	Break	
3:00-4:00 PM	Sebastiano Andreana, DDS, MS; Sam Low, DDS, MS, MEd; Edward R. Kusek, DDS Diode Lasers for Therapy of Peri-Implantitis	Controversies in Dentistry
4:00-4:45 PM	Keith Brewster, DDS Overview of CBCT, CT, MRI, and PET Scan Technologies	Esthetic Dentistry Digital Dentistry
4:45-5:30 PM	Kenneth Luk, BDS, DGDP (UK), MGD (CDSHK), MSc (Hong Kong) Use of a 445-nm Blue Laser in Clinical Dentistry	Esthetic Dentistry
5:30-6:00 PM	Hanaa Nassar, DDS, MSc, PhD The Esthetic Blend Factors: Combining Ultraconservative Veneer Rehabilitation and Laser-Assisted Periodontal Therapy	Esthetic Dentistry
6:00-6:30 PM	Sara Kassem, MSc, PhD An <i>In Vitro</i> Comparative Scanning Electron Microscope Analysis of Desensitizing Toothpaste and Diode Laser, Alone or Coupled, for Evaluation of Efficacy of Dentinal Tubule Occlusion	General Dentistry

6:00-7:00 PM Dr. Eugene Seidner Student Scholarship and Research Grants Program			
6:10 PM	Yujin Ohsugi, DDS, PhD Novel Bone Regenerative Therapy: Sequential Microarray Analysis of Er:YAG Laser-Ablated Bone Tissue and the Modification of Gene Expression in Osteocytes and Osteoblasts		Seidner Laser Research
6:20 PM	Sayaka Katagiri, DDS, PhD Photobiomodulatory Suppressive Effect of a 910-nm Diode Laser on Periodontal Disease Progression in Mice		Seidner Laser Research
6:30 PM	Marcos Garcia, DDS Clinical Outcomes of Adjunctive Antimicrobial Photodynamic Therapy in the Nonsurgical Treatment of Peri- Implant Disease		Seidner Laser Research
6:40 PM	Edmond Rexha, DDS Peri-Implant Defect Morphology and Temperature Changes During Er,Cr:YSGG - Laser Decontamination		Seidner Laser Research
6:50 PM	Wenbin Feng, BS In Vitro Comparison of Traditional vs. Er,Cr:YSGG Laser Techniques for Interproximal Reduction in Orthodontics		Seidner Laser Research
6:30-7:00 PM	John J. Graeber, DMD, MAGD, MALD, FICD Finding Virgin Caries		General Dentistry
7:00-7:30 PM	Charles Hoopingarner, DDS, FAGD, MALD Lasers and Labs: Your Best Friends in Esthetic Dentistry		General Dentistry

Friday, April 9, 2021

Time	Title		Track/Topic		
9:00-9:15 AM	:15 AM Conference Daily Opening & Welcome				
9:15-10:00 AM	Giovanni Olivi, MD, DDS Innovative Endodontics Using SWEEPS: An Update		New Techniques & Technology: Endodontics		
10:00-11:00 AM	Lawrence Kotlow, DDS A Retrospective Synopsis of ALD's 2021 Winter Pediatric Health Symposium		New Techniques & Technology: Pediatric Dentistry		
11:00-11:45 AM	Jeffrey Harrison, DDS Dental Management of Obstructive Sleep Apnea		New Techniques & Technology: Sleep Disorder/Breathing		
11:45 AM- 12:45 PM	Panel Discussion: Question-and- Answer Session: New Techniques and Technology				
	Moderator - Rishita Jaju, DMD Panelists - Jeffrey Harrison, DDS; Lawrence Kotlow, DDS; Giovanni Olivi, MD, DDS		LIVE Panel Q&A		
12:45-1:30 PM	V. Kim Kutsch, DMD Dental Aerosols: Air Safety in Dental Offices *Sponsored by Carifree		Business of Dentistry		
1:00-2:00 PM	Walid Altayeb, DDS, MScD, PhD Ideal Clinical Laser Dentistry Using Multiple Diode Laser Wavelengths (450, 650, & 980 nm) *Sponsored by Wuhan Pioon Technology Co., Ltd		Business of Dentistry		
1:30-2:30 PM	Kelly Blodgett, DMD, NMD, IBDM Predictable Periodontal Payoffs! (A PPP We Can All Support): Combining Lasers and Rx Periodontal Trays for Optimal Clinical Outcomes *Sponsored by Perio Protect		Business of Dentistry		

2:304:00 PM	Break	
4:004:45 PM	28th ALD Annual Membership Meeting and Awards	LIVE - Meet Up
5:005:45 PM	Manaf T. Agha, DDS, MD, PhD Laser Treatment for Oral Melanin Hyperpigmentation	Esthetic Dentistry
5:005:45 PM	Lynn Atkinson, RDH; Jeanette K. Miranda, RDH, BSDH; Mary Lynn Smith, RDH; Angie Wallace, RDH Laser Bacterial Reduction (LBR): Fact vs. Fiction	Hygiene
5:456:30 PM	Islam Kassem, BDS, MSc, FDS RCS Seven Secrets in Successful Facial Esthetics	Esthetic Dentistry
5:456:30 PM	Kristin Pristavec-Hunter, RDH, BS Innovative Technology: A Review of Current Lasers	Hygiene
6:307:00 PM	Marta Maciak, DMD, PhD A Concept of Using Various Laser Wavelengths in Effective, Noninvasive Esthetic Medicine	Esthetic Dentistry
6:307:15 PM	Camille Luke, RDH, MSDH You Are Not Alone!	Hygiene
7:15-8:00 PM	Panel Discussion: Question-and- Answer Session for Dental Hygienists Moderator - Angie Wallace, RDH Panelists - Lynn Atkinson, RDH; Camille Luke, RDH, MSDH; Jeanette K. Miranda, RDH, BSDH; Kristin Pristavec-Hunter, RDH, BS; Mary Lynn Smith, RDH	LIVE Panel Q&A Hygiene

Saturday, April 10, 2021

Time	Title		Track/Topic
9:009:30 AM Conference Daily Opening & Welcome			
9:3010:15 AM	Josep Arnabat-Dominguez, MD, DDS, PhD Effect of Photobiomodulation on Long-Standing Neurosensory Alterations of the Inferior Alveolar and Lingual Nerves		Photobiomodulation PBM
9:3010:15 AM	Rose Nierman, RDH Cross-Coding: Incorporating Medical Billing for Laser Dentistry *Sponsored by Nierman Practice Management		Business of Dentistry
10:15-11:00 AM	Mel A. Burchman, DDS Using Dental Lasers to Treat the Chemotherapy Patient		Photobiomodulation PBM
10:15-11:00 AM	Ron Kaminer, DDS, FAGD Technology-Driven Restorative Dentistry *Sponsored by SHOFU		Business of Dentistry
11:00-11:45 AM	Gerald Ross, DDS Photobiomodulation in the Treatment of Facial Pain / TMD		Photobiomodulation PBM
11:00 AM- 12:00 PM	Edward R. Kusek, DDS Clinical Photography with the Use of the Shofu EyeSpecial C-III *Sponsored by SHOFU		Business of Dentistry Demonstration Course Photography
11:45 AM- 12:15 PM	Grace Sun, DDS, MALD, MAGD, MICOI, FAACD PBMT at Home		Photobiomodulation PBM

12:15-12:45 PM	Maite Moreno, DDS, MS State of the Art and Future of Laser- Assisted Oral Mesenchymal Stem Cells and Their Application in Dental and Medical Conditions for Tissue Engineering	Photobiomodulation PBM
12:00-12:30 PM	Hans Kristian Skjorshammer, BSc A Win-Win Business Model with PBMT *Sponsored by Oral IQ	Business of Dentistry
12:45-1:15 PM	Arun A. Darbar, BDS, DGDP(UK) Prevention and Management of Orofacial Muscle Fatigue	Photobiomodulation PBM
1:15-1:45 PM	Christopher Walinski, DDS What I Did on My COVID Break	Photobiomodulation PBM
1:00-2:30 PM	Break	
2:30-3:00 PM	Jason Pang, BSc, BDS, MSc 1064-nm Nd:YAG as a Novel Wavelength for the Treatment of Oral Mucositis	Photobiomodulation PBM
3:00-4:00 PM	Panel Discussion: Question-and- Answer Session: Photobiomodulation Moderator - James Carroll, AMInstP, FRSM Panelists - Josep Arnabat-Dominguez, MD, DDS, PhD; Arun A. Darbar, BDS, DGDP(UK) ; Mel A. Burchman, DDS; Maite Moreno, DDS, MS; Jason Pang, BSc, BDS, MSc; Gerald Ross, DDS; Grace Sun, DDS, MALD, MAGD, MICOI, FAACD; Christopher Walinski, DDS	Photobiomodulation PBM



28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

ABSTRACTS

BUSINESS OF DENTISTRY

Thursday, April 8, 2021 | 10:00 AM – 11:00 AM

Demonstration Course A "How to" Live Demonstration for the 5 Most Frequent Laser Uses

Track: Demonstration Course – Laser Applications Presenter: Samuel Low, DDS, MS, MEd, Palm Coast, Florida, USA Audience: Both

Create value-added revenue with a step-by-step interactive instruction of laser applications in the practice of all phases of dentistry. Experience positive results with diode and erbium laser wavelengths from soft tissue to periodontal applications. We present procedures including nonsurgical laser bacterial reduction, laser-assisted periodontal therapy (LBR, LAPT)/surgical periodontics, frenectomy, gingivectomy, biopsy/fibroma, and crown lengthening. With the technology of visualizers, you will observe real-time demonstrations with your input for interaction. You gain insight into each procedure in a step-by-step fashion to instill confidence when you return to the practice.

Educational Objectives

- Review pocket access and pearls for LBR, LAPT, and microsurgical flap exposure for periodontitis and peri-implantitis treatment.
- · Understand indications for using lasers in crown lengthening and pre/post-orthodontic procedures including esthetics.
- · Learn procedures for the most common soft tissue issues in restorative dentistry.
- \cdot Develop postoperative evaluation protocols assessing wound healing.

Laser Information: 940-nm Epic X diode laser, 980-nm Epic Hygiene diode laser, 2780-nm Er,Cr:YSGG laser (Biolase, Foothill Ranch, Calif., USA). Parameters will vary depending on the procedure.

Friday, April 9, 2021 | 12:45 PM - 1:30 PM

Dental Aerosols: Air Safety in Dental Offices

Track: Business of Dentistry: COVID-19 Presenter: V. Kim Kutsch, DMD, Jefferson, Oregon, USA Audience: Novice

Dental professionals are routinely exposed to aerosols generated by a variety of dental instruments. These aerosols contain potential pathogens and represent serious health risks to the professional. The high-speed turbine handpiece is the most obvious aerosol generator, but other instruments like sonic and ultrasonic scalers, hard tissue lasers, and even the air-water syringe also contribute significant aerosols. To address the risks from these aerosols, dentistry has adapted universal precautions for infection control and personal protective equipment (PPE) recommendations. In light of the COVID-19 pandemic, current PPE recommendations include an appropriate rated respirator or mask for the procedure, face shield, head cap, gown, gloves, and shoe coverings to reduce the exposure and potential spread of infectious diseases. These help to protect the professional from exposure, but do nothing to minimize the potential pathogenicity or control of the origin of the aerosol during the procedures. This program will present strategies to reduce the health risk of the dental aerosol with preprocedural rinses and also to control the aerosol with extraoral vacuums.

Educational Objectives

- · Discuss the health risks of dental aerosols for dental professionals.
- Examine recommended measures and additional strategies to reduce disease transmission from dental aerosols.
- · Implement simple universal dental aerosol strategies.

Product Information: 99.99% high-efficiency particulate (HEPA) extraoral vacuum (DAX, Dental Safety First, Albany, Ore., USA); Carifree preprocedural rinse (0.20% sodium hypochlorite) (Oral BioTech, Albany, Ore., USA)

Sponsored by Carifree



Friday, April 9, 2021 | 1:00 PM - 2:00 PM

Ideal Clinical Laser Dentistry Using Multiple Diode Laser Wavelengths (450, 650, & 980 nm)

Track: Business of Dentistry Presenter: Walid Altayeb, DDS, MScD, PhD, Doha, Qatar Audience: Both

Background: The clinical application of lasers in oral soft-tissue surgery has continued to expand in the last two decades. Diode lasers are becoming quite popular due to economic and ergonomic considerations. Diode wavelengths in the visible spectrum (450 and 650 nm) and in near-infrared spectrum (980 nm) are widely used in dentistry.

Clinical Implications: Diode laser wavelengths are absorbed mainly by hemoglobin and melanin. Differences in their absorption characteristics require amendment of the treatment protocols for each wavelength including the laser settings (energy and exposure duration) and mode of application (contact or noncontact). Soft tissue ablation, disinfection, biostimulation, and hemostasis without causing collateral thermal damage are the desired clinical outcomes and could be achieved by using the appropriate diode wavelengths to target the specific chromophores at various depths in the oral tissues. The 450-nm wavelength has greater absorption in hemoglobin and melanin compared to other infrared wavelengths. This provides an opportunity to achieve tissue ablation using the photothermal effect (noncontact mode) and more efficient coagulation. The 980-nm wavelength has deeper penetration than 450 nm which leads to remarkable disinfection in periodontal diseases. The 650-nm wavelength is one of the optimal wavelengths for photobiomodulation due to its deep penetration and ability to irradiate the deep tissues with relatively low energy that accelerates wound healing and relieves pain.

Conclusion: Understanding the optical properties and absorption characteristics of diode laser wavelengths is the key to achieve the clinical goals without causing collateral thermal damage.

Educational Objectives

- · Outline the biologic laser-tissue interaction of different diode laser wavelengths.
- · Determine how to select between the different diode wavelengths.
- Employ the absorption characteristics of diode wavelengths to achieve the ideal clinical goals.

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.

Sponsored by Wuhan Pioon Technology Co., Ltd PICON

Academy of Laser Dentistry 2021 Annual Conference

Friday, April 9, 2021 | 1:30 PM - 2:30 PM

Predictable Periodontal Payoffs! (A PPP We Can All Support): Combining Lasers and Rx Periodontal Trays for Optimal Clinical Outcomes

Track: Business of Dentistry Presenter: Kelly Blodgett, DMD, NMD, IBDM, Portland, Oregon, USA Audience: Both

Laser therapies have revolutionized our restorative, periodontal, and cosmetic treatments, yet even excellent initial results can break down over time. Combining Rx periodontal trays with laser therapies creates greater patient compliance, makes them an active participant in the improvement of their health, and simplifies the laser treatments you offer. Additionally, Rx periodontal trays can offer an additional revenue stream for your practice which requires zero doctor time or energy.

Educational Objectives

- Relate the benefits and limitations of laser therapy and prescription tray therapy to treat oral infection and inflammation.
- · Recognize technologies that multiply your team's effectiveness and productivity.
- · Empower patients to maintain oral health with a patient-centered health model.

Sponsored by Perio Protect



Saturday, April 10, 2021 | 9:30 AM - 10:15 AM

Cross-Coding: Incorporating Medical Billing for Laser Dentistry

Track: Business of Dentistry

Presenter: Rose Nierman, RDH, Nierman Practice Management, Tequesta, Florida, USA **Audience**: Both

As dentistry continues to shift toward oral-systemic wellness, more dental procedures are being recognized as medically necessary and being covered under major health insurance plans and policies. Dental practices are recognizing the significant benefits to offering medical insurance reimbursement such as increased case acceptance, expanded referral networks, and increased revenue. Cross-coding practices that utilize the patient's medical insurance are maximizing the patients' benefits and giving them easier access to much-needed care. In this lecture, attendees will learn how to incorporate cross-coding and medical billing into their office.

Discussion will include the services that can potentially be covered by medical insurance, including laser procedures such as frenectomies and treatment of mucositis and pain conditions. Also covered will be the requirements for receiving reimbursement and a step-by- step guide for how to get started.

Educational Objectives

- · Discover which dental laser procedures can be covered under medical insurance.
- · Understand what is needed to bill medical insurance for laser dentistry services.
- · Determine how to get started with billing medical insurance in dentistry.

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.

Sponsored by Neirman Practice Management



Saturday, April 10, 2021 | 10:15 AM – 11:00 PM

Technology-Driven Restorative Dentistry

Track: Business of Dentistry - Digital DentistryPresenter: Ron Kaminer, DDS, FAGD, Hewlett, New York, USAAudience: Both

The day-to-day restorative dental practice is filled simplicities and complexities. Having the right technology from a laser perspective and having state-of-theart materials minimizes the complexities. Join us as we highlight some difficult clinical cases, both from direct and indirect dentistry, and show step-by-step how we solve these case problems with lasers and technology.

Educational Objectives

- · Explain how different laser wavelengths can be used in day-to-day practice.
- · Realize the advantage of using a point-and-shoot camera in day-to-day dentistry.
- · Learn why certain laser wavelengths mesh perfectly with advanced restorative materials.

Laser Information: Dual-wavelength 810- and 980-nm diode laser (Gemini, Ultradent, South Jordan, Utah, USA), 1 Watt superpulsed with 400-micron tip.

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.

Sponsored by Shofu


Saturday, April 10, 2021 | 11:00 AM – 12:00 PM

Demonstration Course

Clinical Photography with Use of the Shofu EyeSpecial C-III

Track: Demonstration Course - Photography Presenter: Edward R. Kusek, DDS, Sioux Falls, South Dakota, USA Audience: Both

The course will demonstrate how to take a variety of photographic images with the Shofu EyeSpecial C-III cameras that meet the guidelines of the American Academy of Cosmetic Dentistry (AACD).

Views: Non-Retracted Views Natural full face – formal view – 1:10 (1:15) magnification Full natural smile – frontal view – 1:2 (1:3) magnification Full natural smile – right lateral view – 1:2 (1:3) magnification Full natural smile – left lateral view – 1:2 (1:3) magnification

Retracted Views

Upper and lower teeth slightly parted – frontal view – 1:2 (1:3) magnification Upper and lower teeth slightly parted – right lateral view – 1:2 (1:3) magnification Upper and lower teeth slightly parted – left lateral view – 1:2 (1:3) magnification Maxillary anterior in view only – frontal view – 1:1 (1:5) magnification Maxillary anterior in view only – right lateral view – 1:1 (1:5) magnification Maxillary anterior in view only – left lateral view – 1:1 (1:5) magnification

Retracted Views Using a Mirror Maxillary arch – occlusal view – 1:2 (1:3) magnification Mandibular arch – occlusal view – 1:2 (1:3) magnification

The course will discuss how to use the camera to aid in communication with dental laboratories, how to take surgical pictures quickly, and the limitations of the camera. Included is a video presentation on how to set up the shot and show a perfect shot from each of the situations. The course will also discuss use of aids to best attain near-perfect pictures by any auxiliary.

Educational Objectives

- \cdot Learn how to take photos appropriate for AACD presentation.
- \cdot Discover tips for shade matching.
- \cdot Identify special tips and tricks for successful clinical photography.

Product Information: Shofu EyeSpecial C-III camera

Sponsored by Shofu



Saturday, April 10, 2021 | 12:00 PM - 12:30 PM

A Win-Win Business Model with PBMT

Track: Business of Dentistry - Photobiomodulation **Presenter**: Hans Skjorshammer, BSc, Los Angeles, California **Audience: All**

This session lays out a new method that practitioners can easily institute in their practice to generate new revenue streams while facilitating patient care both in and out of the dental practice. The benefits of PhotoBioModulation Therapy (PBMT) have regained popularity in recent years. Maturation of light-emitting diode (LED) technology has enabled Oral IQ to introduce an affordable home care unit that is portable, compact, economical, user-friendly, and safe with its unique combination of red and near-infrared wavelengths to be used for PBM therapy. Oral IQ's new medical graded home light treatment units, PBM Light and PBM Light +, and its business model are designed for medical professionals and health practitioners seeking to spread the benefits of PBMT from clinical settings into the home. PBM Light is the ideal solution for treating postoperative surgery pain and discomfort, speeding up healing and recovery in between doctor's visits, and managing pain relief from the convenience of one's home, in clinic, and on the go. It allows medical professionals to build a relationship with their patients and extend their service beyond in-house treatment to reach their patient's home care program. With PBM Light, a sustainable business model is established, via direct dispensing or the Oral IQ affiliate program, providing a win-win situation for both patients and practitioners.

Educational Objectives

- \cdot Learn a win-win business model with PBMT.
- · Service patient needs beyond the clinical setting through (1) direct dispensing and (2) the Oral IQ affiliate program.
- \cdot Comprehend how the PBMT treatment modality is ideal to service patient needs beyond 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.

Laser Information: Both Oral IQ LED light therapy devices are FDA Class 2 registered medical-grade devices with the following wavelength sets:

· PBM Light: 630 nm, 660 nm, 850 nm · PBM Light +: 660 nm, 850 nm, 940 nm

Sponsored by Oral IQ





28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

ABSTRACTS



CONTROVERSIES IN DENTISTRY

1

Thursday, April 8, 2021 | 3:00 PM - 4:00 PM

Diode Lasers for Therapy of Peri-Implantitis

Track: Controversies in Dentistry

Presenters: Sebastiano Andreana, DDS, MS, Buffalo, New York, USA; Sam Low, DDS, MS, MEd, Palm Coast, Florida, USA; Edward R. Kusek, DDS, Sioux Falls, South Dakota, USA

Audience: Both

The presentation will focus on the clinical applications of 810-980 nm diode laser wavelengths for therapy of peri-implantitis. Diode lasers are used with dual purposes, for their antimicrobial effects and their biostimulating effects. This lecture will show the techniques with clinical cases, focusing on the safety of the procedures, and supporting the procedures with findings from laboratory studies.

Educational Objectives

- · Summarize the clinical applications of diode lasers for treatment of peri-implantitis.
- \cdot Describe the safety of using diode lasers for treatment of peri-implantitis.
- · Identify the clinical techniques of using diode lasers for treatment of peri-implantitis.

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.

Laser Information: 810-nm Odyssey Diode Laser (Ivoclar Vivadent, Amherst, N.Y., USA), range 0.2-0.8 Watts in continuous mode, in contact and noncontact; 810-nm Photon Diode Laser, (Zolar Technology, Mississauga, Ontario, Canada), range 0.2-0.8 Watts in continuous mode; 970-nm Sirona SIROLaser (Dentsply Sirona, Bensheim, Germany)



28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

ABSTRACTS



ESTHETIC DENTISTRY

Thursday, April 8, 2021 | 4:00 PM – 4:45 PM

Overview of CBCT, CT, MRI, and PET Scan Technologies

Track: Esthetic Dentistry - Digital Dentistry Presenter: Keith Brewster, DDS, Dallas, Texas, USA Audience: Both

This presentation compares computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET) scans of the same anatomical areas and shows what information can be learned from each scanning modality.

Educational Objectives

- · Define different scanning technologies.
- · Specify the objective information-gathering capability of each scan modality.
- · Appreciate the information gathered and each discipline's strengths and limitations.

Thursday, April 8, 2021 | 4:45 PM – 5:30 PM

Use of a 445-nm Blue Laser in Clinical Dentistry

Track: Esthetic Dentistry

Presenter: Kenneth Luk, BDS, DGDP(UK), MGD(CDSHK), MSc (Aachen RWTH), Hong Kong Special Administrative Region (SAR), China

Audience: Both

The blue diode laser wavelength (445 nm) has been available to the dental market for 5 years. It is a relatively new laser compared to near-infrared diode lasers. The optical properties and tissue interaction of this wavelength offer additional benefits in clinical applications. This case series demonstrates the use of the 445-nm diode wavelength as a soft tissue surgical laser and its application in photobiomodulation. Whether the blue wavelength will replace other diode wavelengths will also be discussed.

- · Discover the optical properties of the 445-nm laser wavelength.
- · Describe laser-tissue interaction of this wavelength.
- · Enumerate clinical applications of the 445-nm laser wavelength.
- · Specify advantages and disadvantages of this wavelength.

Laser Information: 445-nm diode laser (SiroLaser Blue, Dentsply Sirona, Bensheim, Germany), CW output power 0.6 to 2 W, 320- μ m fiber, 5 mm rod. Parameters vary for the demonstrated clinical procedures.

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.

Thursday, April 8, 2021 | 5:30 PM - 6:00 PM

The Esthetic Blend Factors: Combining Ultraconservative Veneer Rehabilitation and Laser-Assisted Periodontal Therapy

Track: Esthetic Dentistry Presenter: Hanaa Nassar, DDS, MSc, PhD, Cairo, Egypt Audience: Both

When definitive esthetic rehabilitation is required, conservative treatment comprising morphologic modifications should be considered as a first therapeutic option. Ultraconservative additive rehabilitation strategies utilizing recent adhesive technology in combination with advanced ceramic materials and laser protocols allow practitioners to not only create highly esthetic and natural smiles, but also maintain the balance between pink and white esthetics and provide the patient with a faithful reproduction of natural teeth with notable morphological and color stability and excellent periodontal biocompatibility. No-prep and minimal preparation additive veneers are considered an excellent treatment option for certain esthetic challenge, and when both hard and soft tissues are properly manipulated, clinical longevity can be guaranteed. This lecture will discuss an ultraconservative additive esthetic rehabilitation protocol through the combination of minimal preparation veneers and laser-assisted periodontal treatment. Benefits as well as shortcomings of prep-veneers will be discussed. This presentation will also highlight the guidelines for case selection with illustrations of different cases that require additive interventions. Moreover, full digital work flow for case planning and treatment execution as well as a systematic protocol for predictable bonding will be explained.

- Examine the guidelines and protocols suggested for case selection for minimal or no-prep veneers and verify the cases that require laser-assisted periodontal therapy.
- Recognize the laser-based protocol for soft and hard tissue treatment for optimum results and longevity.

- Discuss the protocols for minimally invasive veneering of discolored teeth and cases that require laser-assisted gingival depigmentation.
- \cdot Convey and implement the clinical protocol for preparation and bonding of veneers to ensure clinical success.

Product Information:

- 1. CAD/CAM Scanners: Identica Blue extraoral scanner (Medit, Seoul, South Korea); inEos X5 scanner (Dentsply Sirona, Charlotte, N.C., USA).
- 2. CAD/CAM software: Exocad DentalCAD (exocad, Darmstadt, Germany); CEREC 15.0.0 (Dentsuply Sirona, Charlotte, N.C., USA).
- 3. 5-axis milling machines: CAM 5-S1 Impression (vhf camfacture, Ammerbuch, Germany); CEREC inLab MC X5 (Dentsply Sirona, Charlotte, N.C., USA).
- 4. Digital shade guide: Vita Easyshade V spectrophotometer (VITA Zahnfabrik, Bad Säckingen, Germany).
- 5. Laser device: Waterlase Express (Biolase, Foothill Ranch, Calif., USA), 2780 nm, free-running pulsed, Average Power 0.1-4.0 W, Pulse Energy 0-250 mJ, Fiber/Tip Diameter 200-1200 μm.

Friday, April 9, 2021 | 5:00 PM - 5:45 PM

Laser Treatment for Oral Melanin Hyperpigmentation

Track: Esthetic Dentistry

Presenter: Manaf T. Agha, DDS, MD, PhD, Dubai, United Arab Emirates **Audience**: Both

The normal appearance of the gingiva and lips is pink to light red and this appearance may change due to many factors and might be noticeable causing esthetic concerns. In the Gulf area, melanin pigmentation is a concern for some individuals and patients expect the pigmentation to be removed for esthetic reasons. Many techniques have been used to remove the melanin pigmentation such as using surgical blades, diamond or ceramic burs, chemicals, and lasers. This presentation highlights the use of many laser wavelengths in the treatment of hyperpigmentation. Discussion will include an understanding of the mechanism of different wavelengths in melanin pigmentation of procedure, color improvement, patient satisfaction, and relapse.

- \cdot Relate the causes of oral melanin hyperpigmentation.
- \cdot Understand the mechanism of different laser wavelengths in the treatment of melanin hyperpigmentation.
- · Recognize the adverse effects and the limitations of different laser wavelengths in melanin depigmentation procedures.

Friday, April 9, 2021 | 5:45 PM - 6:30 PM

Seven Secrets in Successful Facial Esthetics

Track: Esthetic Dentistry Presenter: Islam Kassem, BDS, MSc, FDS RCS, Alexandria, Egypt Audience: Both

Facial esthetics is considered a complementary part in dentistry to insure safety and satisfy the higher demands in esthetics. In this lecture the presenter will show his experience in augmenting facial esthetic in dentistry using digital workflow and other applications with different clinical cases. Other topics include complications and how to do troubleshooting during clinical practice.

Educational Objectives

- · Utilize digital workflow in esthetic dentistry.
- · Implement digital anatomy in patient care.
- \cdot Discuss the complications of facial esthetics.

Friday, April 9, 2021 | 6:30 PM - 7:00 PM

A Concept of Using Various Laser Wavelengths in Effective, Noninvasive Esthetic Medicine

Track: Esthetic Dentistry Presenter: Marta Maciak, DMD, PhD, Krakow, Poland Audience: Both

Lasers are very popular in conventional esthetic medicine treatment and procedures. However, it is common that mostly ablative and nonablative deeply penetrating wavelengths are recommended. Unfortunately, the methods used often require a long convalescence time, which is uncomfortable for the patients even if the results are mostly predictable. The lecture will introduce a combination of different laser wavelengths in esthetic medicine based on the literature, and knowledge and experience of the lecturer. Photobiomodulation seems to be the future of all kinds of treatment, also in the field of esthetic medicine. Noninvasive skin rejuvenation is a natural way of rejuvenation thanks to collagen stimulation with the use of different laser wavelengths (635, 980, 1064, and 2940 nm) combined with proper cosmetics, which gives the same results as invasive methods but is more accepted by patients. The effects of noninvasive skin rejuvenation are long-lasting thanks to natural stimulation of the patient's cells involved in the

whole procedure; no side effects are observed, which is crucial for the patient. The laser is also very effective for acne treatment. The combination of different wavelengths and photoactive disinfection significantly reduces the number of bacteria even after one session without scars and relapse of the disease. The use of new multiwavelength lasers is now commonplace in dentistry; however, the emergence of new modalities and wavelengths is going to raise the standard of care and esthetic values for our patients.

Educational Objectives

- \cdot Gain an understanding of wavelength-specific modalities.
- \cdot Describe how to use different laser wavelengths in esthetic medicine.
- · Identify properties of a laser in everyday practice.
- \cdot Enumerate the advantages of multiwavelength 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.



28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

ABSTRACTS

GENERAL DENTISTRY

1

Thursday, April 8, 2021 | 10:00 AM - 11:00 AM

Demonstration Course

A "How to" Live Demonstration for the 5 Most Frequent Laser Uses

Track: Demonstration Course – Laser Applications Presenter: Samuel Low, DDS, MS, MEd, Palm Coast, Florida, USA Audience: Both

Create value-added revenue with a step-by-step interactive instruction of laser applications in the practice of all phases of dentistry. Experience positive results with diode and erbium laser wavelengths from soft tissue to periodontal applications. We present procedures including nonsurgical laser bacterial reduction, laser-assisted periodontal therapy (LBR, LAPT)/surgical periodontics, frenectomy, gingivectomy, biopsy/fibroma, and crown lengthening. With the technology of visualizers, you will observe real-time demonstrations with your input for interaction. You gain insight into each procedure in a step-by-step fashion to instill confidence when you return to the practice.

Educational Objectives

- Review pocket access and pearls for LBR, LAPT, and microsurgical flap exposure for periodontitis and peri-implantitis treatment.
- · Understand indications for using lasers in crown lengthening and pre/post-orthodontic procedures including esthetics.
- \cdot Learn procedures for the most common soft tissue issues in restorative dentistry.
- \cdot Develop postoperative evaluation protocols assessing wound healing.

Laser Information: 940-nm Epic X diode laser, 980-nm Epic Hygiene diode laser, 2780-nm Er,Cr:YSGG laser (Biolase, Foothill Ranch, Calif., USA). Parameters will vary depending on the procedure.

Thursday, April 8, 2021 | 6:00 PM – 6:30 PM

An *In Vitro* Comparative Scanning Electron Microscope Analysis of Desensitizing Toothpaste and Diode Laser, Alone or Coupled, for Evaluation of Efficacy of Dentinal Tubule Occlusion

Track: General Dentistry Presenter: Sara Kassem, MSc, PhD, Cairo, Egypt Audience: Both

Objective: The objective of this study was to compare the dentinal tubule occlusion capabilities of nano-hydroxyapatite (nHAp)-containing desensitizing toothpaste and diode laser, alone or coupled.

Materials and Methods: Twenty-eight mid-coronal dentin discs were prepared from intact human premolars extracted for orthodontic purposes. The discs were immersed in 1% citric acid for 20 seconds to expose the dentinal tubules to simulate sensitive teeth and then randomly divided into four groups (n = 7). The control group (I) received no desensitizing treatment. The experimental group (II) was treated solely with a commercial nHAp-containing desensitizing toothpaste (Biorepair, Coswell, Funo di Argelato, Bologna, Italy). Group III was treated solely with a 980-nm diode laser (Simpler, Doctor Smile, Brendola (VI), Italy) in noncontact mode for 60 seconds. Group IV was treated with both toothpaste and diode laser. After toothpaste and laser application, specimens were subjected to acid challenge to analyze the resistance to tubule occlusion. After treatment, analysis of occluded dentinal tubules was done by scanning electron microscope (SEM).

Results: SEM analysis revealed that all the experimental groups noticeably occluded the dentinal tubules, and the extents were complete after application for 7 days. The majority of the occlusion was still preserved even after acid challenge. Group IV showed the most dentinal tubule occlusion in comparison to other groups.

Conclusion: Diode laser application has shown more efficacy than nHApcontaining toothpaste in dentinal tubules occlusion, while combining both methods resulted in a higher efficacy.

Educational Objectives

- \cdot Evaluate the effect of desensitizing toothpaste and diode laser on dentinal tubules.
- \cdot Characterize the histological changes in the dentinal tubule following laser irradiation.

Laser Information: A 980-nm diode laser (Simpler, Doctor Smile, Brendola (VI), Italy) was utilized for the procedure, operated at 1 W of power in noncontact mode for 60 seconds.

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.

Thursday, April 8, 2021 | 6:30 PM - 7:00 PM

Finding Virgin Caries

Track: General Dentistry Presenter: John J. Graeber, DMD, MAGD, MALD, FICD, East Hanover, New Jersey, USA Audience: Both

With the introduction of new techniques and materials into dental practice, the potential of ultraconservative cavity preparation can become a reality. For preserving the maximum of natural tooth structure, the long-held concepts of diagnosis and caries management must change. The use of hundred- or thousand-year-old instrumentation must be replaced with ultrasensitive diagnostic instrumentation. The earliest possible diagnosis and contemporary caries management must replace antiquated X-rays and explorers as well as the "Drill and Fill" mentality. The 70-year-old Air Rotor is responsible for much of the iatrogenic damage to our patients' teeth. Today's treatment technology with all-tissue lasers and/or air-abrasive techniques can be utilized to create true micro-invasive treatment with very little need for local anesthetics or rotary instrumentation. These technologies have proven incapable of causing the microfractures leading to tooth fracture or early restoration failure. This presentation will demonstrate current diagnostic and treatment techniques for the patient-oriented practitioner.

- \cdot Observe micro-videos of actual cavity preparation treatment techniques.
- · Incorporate many of these concepts into one's own dental practice.
- \cdot Comprehend the advantages of each diagnostic and treatment device.

Thursday, April 8, 2021 | 7:00 PM - 7:30 PM

Lasers and Labs: Your Best Friends in Esthetic Dentistry

Track: General Dentistry Presenter: Charles Hoopingarner, DDS, FAGD, MALD, Austin, Texas, USA Audience: Both

Making your patients thrilled with their smile is a team effort with communication being the critical factor. Learning to listen to the patient is paramount. Communication with the laboratory allows all three participants in the experience to work together to achieve the desired result. Principles of smile design should be explained during the interview process. Soft tissue profile is exceedingly important and does not have to be a limiting factor. Soft and hard tissue repositioning can easily and healthily be accomplished with a variety of lasers. Principles of biologic width must be followed to achieve the desired long-term healthy result. Even with meticulous care it is on rare occasion necessary to remove or reposition a final restoration. Laser technology allows this to be done without inconvenience to the patient. Following the principles of team effort outlined in this presentation will allow dentists to produce the consistent, satisfying results that all members of the equation are seeking.

Educational Objectives

- · Identify the patient's objectives.
- Achieve a smile design that meets the patient's objectives and communicate this information to the laboratory with written and visual instructions.
- Design and achieve a soft tissue framework that complements the patient's smile with various lasers while maintaining optimum soft tissue health.

Laser Information: Soft issue surgeries were done with either a 940-nm diode laser (Biolase, Foothill Ranch, Calif., USA) at 1 Watt and 20% duty cycle or an 810-nm diode laser (Picasso, AMD Lasers, West Jordan, Utah, USA) at 1 Watt and 50% duty cycle. Osseous surgeries were performed with a 2780-nm Er,Cr:YSGG laser (Biolase) at 2-4 Watts with heavy water accompaniment. One combined case was done with a 2940-nm Er:YAG laser (HOYA ConBio, Fremont, Calif., USA) at 1.5 Watts with heavy water usage.



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ABSTRACTS

HYGIENE

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1

Friday, April 9, 2021 | 5:00 PM - 5:45 PM

Laser Bacterial Reduction (LBR): Fact vs Fiction

Track: Hygiene

Presenters: Lynn Atkinson, RDH, Torrance, CA Jeanette K. Miranda, RDH, BSDH, Sioux Falls, South Dakota, USA; Mary Lynn Smith, RDH; Angie Wallace, RDH

Audience: Both

This presentation discusses the information and misinformation surrounding Laser Bacterial Reduction, or LBR. The first segment will provide research to support LBR and anecdotal experience with successful LBR treatment. Technique will be reviewed and the distinction between Laser-Assisted Periodontal Therapy (LAPT) and Laser Bacterial Reduction (LBR) will be examined. The second segment will be open to attendees for a question-andanswer session.

- \cdot Explore the research on laser bacterial reduction (LBR).
- · Differentiate between LBR and LAPT.
- · Review technique for LBR.

Thursday, April 8, 2021 | 10:00 AM – 11:00 AM

Demonstration Course A "How to" Live Demonstration for the 5 Most Frequent Laser Uses

Track: Demonstration Course – Laser Applications Presenter: Samuel Low, DDS, MS, MEd, Palm Coast, Florida, USA Audience: Both

Create value-added revenue with a step-by-step interactive instruction of laser applications in the practice of all phases of dentistry. Experience positive results with diode and erbium laser wavelengths from soft tissue to periodontal applications. We present procedures including nonsurgical laser bacterial reduction, laser-assisted periodontal therapy (LBR, LAPT)/surgical periodontics, frenectomy, gingivectomy, biopsy/fibroma, and crown lengthening. With the technology of visualizers, you will observe real-time demonstrations with your input for interaction. You gain insight into each procedure in a step-by-step fashion to instill confidence when you return to the practice.

Educational Objectives

- Review pocket access and pearls for LBR, LAPT, and microsurgical flap exposure for periodontitis and peri-implantitis treatment.
- \cdot Understand indications for using lasers in crown lengthening and pre/post-orthodontic procedures including esthetics.
- \cdot Learn procedures for the most common soft tissue issues in restorative dentistry.
- \cdot Develop postoperative evaluation protocols assessing wound healing.

Laser Information: 940-nm Epic X diode laser, 980-nm Epic Hygiene diode laser, 2780-nm Er,Cr:YSGG laser (Biolase, Foothill Ranch, Calif., USA). Parameters will vary depending on the procedure.

Friday, April 9, 2021 | 5:45 PM - 6:30 PM

Innovative Technology: A Review of Current Lasers

Track: Hygiene Presenter: Kristin Pristavec-Hunter, RDH, BS, Dallas, Texas, USA Audience: Both

Dental practices across the country, and their patients, are enjoying the advantages inherent to laser technology. From early cavity detection to cosmetic treatments, dental lasers are a versatile tool that saves time, lessens discomfort, and dramatically improves the patient experience. If a dentist is considering investing in a laser for the dental practice, an understanding of the different devices on the market and the use of each one is important. Pros of laser dentistry: The dental laser is a versatile tool that offers a number of benefits to dentists, hygienists, and patients alike.

More efficient: The dental laser makes dental procedures themselves faster, with fewer follow-up visits afterward.

Minimally invasive: In most cases, laser dentistry reduces pain and discomfort for the patient. Because there is less pressure, patients may not need general anesthesia or anesthetic.

Increased precision: The laser is a very precise tool, allowing a dentist to preserve healthy tissue and tooth material. That makes the laser especially useful for the treatment of dental caries or periodontal disease.

Reduced patient anxiety: Patients who fear the dental drill will find the laser much less intimidating. These tools are smaller and much quieter, and the reduced pain and discomfort helps patients feel more relaxed during treatment.

Reduced risk of infection: Because it is a single tool, the dental laser can help keep the area disinfected, reducing the risk of bacterial infections.

Reduced bleeding and swelling: With little trauma caused to the gum, tooth, and surrounding tissue, laser treatments mean minimal bleeding and much faster recovery times.

Versatility: Soft-tissue lasers and hard-tissue lasers can be used for a wide variety of dental procedures in adult and pediatric patients.

With so many positive aspects to the laser it is important to understand the differences of the lasers on the market, what they are used for, and the different features they have. Today's dental lasers can be used in nearly every aspect of dentistry, and for many practices, the advantages clearly outweigh the negatives. Understanding the pros and cons of laser dentistry makes it easier to evaluate how a dental laser might help one's practice.

Educational Objectives

- \cdot Review current dental laser devices on the market.
- \cdot Relate their different uses in hard tissue and soft tissue.
- \cdot Specify estimates of costs and product features.

Laser Information: Lasers from AMD Lasers, West Jordan, Utah, USA; Biolase, Foothill Ranch, Calif., USA; Convergent Dental, Needham, Mass., USA (Solea); DenMat, Lompoc, Calif., USA (SOL); Dentsply Sirona, Bensheim, Germany; Great Plains Technologies, Fairfield, Neb., USA (Denta II); King Dental, Prospect, Ky., USA (Beamer); Ultradent, South Jordan, Utah, USA (Gemini).

Friday, April 9, 2021 | 6:30 PM - 7:15 PM

You Are Not Alone!

Track: Hygiene Presenter: Camille Luke, RDH, MSDH, Tumwater, Washington, USA Audience: Both

Practicing dentistry during a pandemic has added stress to team members and patients alike. How are you and your team dealing with these issues? What sort of tips and techniques are you employing to help yourself, your coworkers, and your patients? What do you do if a team member tests positive or has been notified they were around someone who tested positive? What seem to be the biggest stressors for your patients? What kinds of questions are they asking your team members? Sit down with us and listen to how a group practice is dealing with these issues. Know that you are not alone in this and learn from the experiences of others.

- · Identify the 3 key points to reduce stress and keep you focused and positive during a pandemic.
- \cdot Recognize scheduling practices to maintain productivity and deliver quality patient care.
- · Provide answers for the top 3 questions asked by patients visiting the dental office.

Friday, April 9, 2021 | 7:15 PM - 8:00 PM

(LIVE) Panel Discussion: Question-and-Answer Session for Dental Hygienists

Track: Hygiene

Audience: Both Moderator: Angie Wallace, RDH, Owasso, Oklahoma, USA Panelists: Lynn Atkinson, RDH, Torrance, California, USA; Camille Luke, RDH, MSDH, Tumwater, Washington, USA; Jeanette Miranda, RDH, BSDH, Sioux Falls, South Dakota, USA; Kristin Pristavec-Hunter, RDH, BS, Dallas, Texas, USA; Mary Lynn Smith, RDH, McPherson, Kansas, USA

We will be discussing and clearing up several concerns and incorrect information that has been published about laser bacterial reduction (LBR). Many times, this procedure is confused with laser-assisted periodontal therapy (LAPT). We will take the time to share with you the difference between the two procedures, some of the studies that have been published, and how to do the LBR procedure. We welcome questions and will discuss how we can make sure we are all on the same page as we present information to our patients.

As we delve into Innovative Technology, we will explore the new information and equipment that is available to Dental Hygienists, and answer your questions on how to get trained in these tools and be able to use them chairside.

Many times we feel overwhelmed and we will help you feel comfortable with the techniques and skills needed to get through some of these tough times in dental hygiene.

The panelists will discuss the possible benefits, limitations, and potential risks of these topics while respecting clinical expertise and best evidence.

- · Review advantages of Laser Bacterial Reduction in practicing dental hygiene.
- \cdot Understand differences in dental lasers available to the dental hygienist.
- · Explore the impact of COVID-19 on the practice of dental hygiene.



28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

ABSTRACTS

IMPLANTOLOGY

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1

Thursday, April 8, 2021 9:15 AM - 10:00 AM

The New Standard of Care in Managing Peri-Implant Disease

Track: Implantology Presenter: Samuel Low, DDS, MS, MEd, Palm Coast, Florida, USA Audience: Both

While inflammation associated with dental implants is at an all-time high, we can prevent loss of implants with innovative chairside techniques to reverse implant mucositis and also show success via minimally invasive techniques with bone loss implantitis. Long-term implant survival can depend on quality prevention, treatment, and maintenance. The dental team (especially the dental hygienist) can have successful systems and tools to enhance longevity and implant health. A recent landmark study demonstrates validity in managing peri-implant disease with all-tissue erbium lasers. Clinical research shows how erbium laser wavelengths have been incorporated into procedures for treating peri-implant disease with no adverse thermal events as to the integrity of implant surfaces. Dentistry is evolving into a minimally invasive culture with attention to positive patient perceptions and comfort. We will define user-friendly protocols, establishing systems related to severity of implantitis with expectations. Patient talk tracks for positive case acceptance will be reviewed.

Educational Objectives

- Explore the etiology of implant disease from both a microbial and surface corrosion perspective.
- Develop an understanding of the erbium laser wavelength as related to the effects on target tissue for implants.
- Describe the effect of erbium lasers on various titanium surfaces as part of a detoxification process in managing peri implantitis.
- Comprehend how the integration of an all-tissue laser creates a positive niche for patient acceptance and a value-added revenue stream.

Laser Information: 2780-nm Er,Cr:YSGG laser (Biolase, Foothill Ranch, Calif., USA), 1.5 Watts, various tip diameters and configurations

Thursday, April 8, 2021 | 10:00 AM - 10:45 AM

Treatment of Peri-Implantitis Using UVC Lasers

Track: Implantology Presenter: Robert Miller, MA, DDS, FACD, Delray Beach, Florida, USA Audience: Advanced

Titanium oxide implant surfaces can age with time in the presence of both inorganic and organic contaminants. When an implant becomes infected, the ionic bonding of organic compounds can prevent the regrowth of bone during grafting procedures. Cleansing of the implant surface with either chemotherapeutic agents or ablative lasers does not completely remove these contaminants, leading to a hydrophobic surface. Treatment of the surface with an ultraviolet C (UVC) wavelength can remove these organic compounds, returning the implant surface to a pristine state and increasing the chances for re-integration of the implant body.

Educational Objectives

- Understand the biologic change to the implant surface with organic and inorganic contaminants.
- · Explain how implant surface contamination creates a hydrophobic surface.
- Describe how a specific UVC wavelength can restore a pristine implant surface through the process of photofunctionalization.

Laser Information: Prototype handpiece created by Robert J. Miller, DDS

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.

Thursday, April 8, 2021 | 10:45 AM - 11:30 AM

How Digital Technology Enables Safer and More Accurate Implant Planning and Computer-Guided Surgery

Track: Implantology Presenter: Robin D. Horton, BDS, Harpenden, Hertfordshire, United Kingdom Audience: Both

This presentation will start with cone beam computed tomography (CBCT) and intraoral scanning (IOS), describing their strengths and weaknesses and what to look out for. Included are some general safety data and rationale for always using CBCT when planning implant surgery. Discussion includes how to collect the data and import into implant planning software (DTX Studio Implant, Nobel Biocare, Kloten, Switzerland) or directly into the new X-Guide (X-Nav Technologies, Lansdale, Pa., USA) surgery machine itself. This enables the clinician to rapidly plan, make virtual setups, and create a virtual surgical guide in minutes. A visual guide machine can then be used to place the implant accurately using video cameras to pick up markers, one fixed on the patient and one fixed on the surgical handpiece, to give turn-by-turn directions. The clinician can more confidently place implants, providing an achievable margin around vital structures, and lining up implants easily with each other. With the new advances in X-Guide and the X-Mark (X-Nav Technologies) probe tool, one can change the plan as one goes along if needed. There is no more waiting for a printed guide to come back. Access is easier as normal-length drills are used with the visual-guided machine.

Educational Objectives

- · Explain why CBCT is crucial in safe implant dentistry.
- · Understand how to bring data together from different sources to enable visualization of the final proposed result to ensure predictable and excellent planning.
- Appreciate why guided surgery is safer when placing implants than freehand, and which systems are the most accurate.
- \cdot Learn how to take a digital scan of the emergence profile.

Laser Information: 2780-nm Er,Cr:YSGG laser (iPlus, Biolase, Foothill Ranch, Calif., USA) for opening site and socket debridement. 940-nm diode laser (Epic X, Biolase) with healing wand for photobiomodulation

Sponsored by Nobel Biocare UK



Thursday, April 8, 2021 | 11:30 AM – 12:15 PM

Er:YAG Laser-Assisted Comprehensive Periodontal Pocket Therapy (Er-LCPT)

Track: Implantology - Laser Research Periodontology Presenter: Akira Aoki, DDS, PhD, Tokyo, Japan Audience: Both

Lasers are increasingly being used in periodontal therapy because of various advantageous therapeutic effects such as ablation, hemostasis, bactericidal effect, and biostimulation. The Er:YAG laser is among the most suitable for periodontal treatment because it exhibits effective ablation of periodontal hard and soft tissues, with minimal thermal side effects, and thereby does not impair wound healing. Root and bone surfaces can be treated with this laser. In particular, enhancement of bone regeneration following Er:YAG laser debridement has been suggested in an animal study. To date, numerous clinical studies for periodontal pocket treatment using an Er:YAG laser have been published and some have reported positive results; however, a consensus has not vet been reached regarding its effects due to differences in methods. and parameters of irradiation for pocket therapy. This presentation reviews the basic and photobiomodulation (PBM) effects of an Er:YAG laser on periodontal tissues as well as the findings of previous clinical studies for pocket treatment. Then, a novel procedure using an Er:YAG laser combined with conventional mechanical treatment (Er:YAG laser-assisted comprehensive periodontal pocket therapy: Er-LCPT), is introduced. Er-LCPT is a minimally invasive flapless surgery that enables safe, effective, and comprehensive debridement of periodontal pockets. In the treatment of residual pockets, the effectiveness and safety of this procedure have been confirmed by case series. Also, significantly improved outcomes of clinical parameters have been detected by a randomized controlled trial of Er-LCPT when compared to scaling and root planing (SRP) alone. Er-LCPT may also be used as a regenerative therapy in limited cases.

Educational Objectives

- Enumerate the advantageous characteristics of the Er:YAG laser in periodontal therapy.
- Explain the current clinical status of the Er:YAG laser in pocket treatment.
- · Understand the concept, procedure, and effects of Er-LCPT technique.

Laser Information: Er:YAG laser (Irwin AdvErl EVO, J. Morita, Kyoto, Japan)

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.

Thursday, April 8, 2021 | 12:15 PM – 1:15 PM

(LIVE) Panel Discussion: Question-and-Answer Session: Lasers in the Treatment of Peri-Implant Disease: Benefits, Limitations, and Potential Risks

Track: Implantology and Periodontology
Moderator: Walid Altayeb, DDS, MScD, PhD
Panelists: Akira Aoki, DDS, PhD; Robin D. Horton, BDS; Samuel Low, DDS, MS, MEd; Robert Miller, MA, DDS, FACD

Peri-implant diseases are a growing concern in recent years and stand as a great challenge for clinicians, especially since there is no standard of care for peri-implant diseases and clinicians are faced with many choices when deciding upon a method of treatment. Appropriate laser-assisted peri-implantitis therapy may provide additional benefits compared to traditional treatment. Nevertheless, it is difficult to draw specific conclusions about the clinical outcomes. This difficulty is due to several factors, including a wide diversity in the types of lasers, energy settings, and modes of delivery utilized, in addition to the heterogeneity and potential for bias among studies. The panelists will discuss the possible benefits, limitations, and potential risks of laser therapy of peri-implantitis based on clinical expertise and best evidence.

- · Address the possible benefits of using lasers in the treatment of peri-implantitis.
- · Identify the limitations of some laser wavelengths in peri-implantitis treatment.
- Highlight the potential risks of different laser wavelengths to dental implants and surrounding tissues.
- Specify possible safe and efficient laser wavelengths and protocols for the treatment of peri-implantitis.



28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

ABSTRACTS

NEW TECHNIQUES & TECHNOLOGY

Endodontics

Friday, April 9, 2021 | 9:15 AM - 10:00 AM

Innovative Endodontics Using SWEEPS: An Update

Track: New Techniques and Technology - Endodontics Presenter: Giovanni Olivi, MD, DDS, Rome, Italy Audience: Both

Photoacoustic technology is used to activate the commonly used irrigants in endodontics (sodium hypochlorite (NaOCI) and ethylenediaminetetraacetic acid (EDTA)) and does not replace any conventional instrumentation, but only reduces it to a minimal ISO 20-25/04 enlarging of the root end. The initial Photon-Induced Photoacoustic Streaming (PIPS) protocol, and today's Shock Wave Enhanced Emission Photoacoustic Streaming (SWEEPS) protocols are validated by a wide body of published and non-published experiments and data. Scanning electron microscopy, confocal analysis, and computed tomographic (CT) imaging are used to evaluate tissue dissolution, debridement, smear layer, and endodontic filling material removal from the endodontic space. Bacteriological studies are performed to assess the decontaminating effect of these techniques. High-speed videos at 100,000 frames per second are shown to explain the innovative dual-pulse laser emission in the endodontic environment. The lecture will present an overview of the scientific concepts behind the clinical application and a series of clinical cases.

Educational Objectives

- · Know and discuss the limitations of the conventional use of lasers in endodontics.
- \cdot Identify the evidence-based literature on photoacoustic techniques in endodontics.
- \cdot Specify the advantages of SWEEPS technique in endodontics.
- \cdot Enumerate the tips and tricks for efficient and safe use of the laser in endodontics.

Laser Information: 2940-nm Er:YAG laser (LightWalker AT, Fotona, Ljubljana, Slovenia), 20 W maximum output power, free-running pulse, 25-microsecond pulse duration, 15-20 Hz, 10-20 mJ, 400-micron flat-end and radial-end tips. 30 s activation plus resting phase repeated many times during the treatment.

Pediatric Dentistry

Friday April 9, 2021 | 10:00 AM - 11:00 AM

A Retrospective Synopsis of ALD's 2021 Winter Pediatric Health Symposium

Track: Pedodontics Presenter: Lawrence Kotlow, DDS, Albany, New York, USA Audience: Both

This past winter the Academy of Laser Dentistry presented a 10-week continuing education symposium on the tongue and airway. A group of internationally recognized authorities presented their expertise on the nearand long-term effects of restrictive tethered oral tissues (RTOTs). The aim of this presentation is to provide a glimpse into the importance of early intervention and the interdisciplinary team approach to early care and how we as clinicians can make a positive difference in the lives of so many people. A summary of the following topics will be covered. The full symposium is available ondemand throughout 2021.

Pediatric dysfunction Cranial development Myofunctional therapy and maternal bonding Orthodontics and the tongue The tongue as it relates to the airway Chiropractic care of the infant with TOTs Pre- and post-frenectomy therapy for speech development Laser therapy for airway management Managing bleeding during TOTs care Insurance and medical reimbursement

- Explain how restrictive ankyloglossia can affect long-term brain development and contribute to orofacial myofunctional disorder.
- \cdot Identify the members of the assessment and treatment team for RTOTs.
- Discover how to do a proper assessment and examination to determine the existence of RTOTs.
- · Summarize available treatment solutions for tethered oral tissues.

Sleep Disorder Breathing

Friday, April 9, 2021 | 11:00 AM – 11:45 AM

Dental Management of Obstructive Sleep Apnea

Track: New Techniques and Technology - Sleep Apnea Presenter: Jeffrey Harrison, DDS, Cortez, Colorado, USA Audience: Both

While COVID-19 may be the most important pandemic on everyone's mind, the most important epidemic facing your patients is getting far less attention and causing far more harm – obstructive sleep apnea (OSA). One in four of the adult patients you saw today is already starting to suffer from this not-so-silent killer without their knowledge. Medicine has failed to adequately identify and treat most patients in need and now dentists find themselves being asked to serve on the front line for screening, diagnosing these patients, and possibly playing an important role in their management. Make 2021 the year you stop ignoring the dental warning signs and start to collaborate with other health care providers by understanding the connection airway, sleep, and breathing has with the dentistry you are doing every day.

Educational Objectives

- \cdot Enumerate the signs and symptoms of sleep-related breathing disorders.
- · Appreciate the prevalence of the obstructive sleep apnea epidemic.
- · Learn a patient- and physician-friendly protocol to follow from screening through diagnosis, treatment, and medical insurance reimbursement.
- \cdot Specify where to go next for education and training.

Product Information: EccoVision Pharyngometer / Rhinometer (Sleep Group Solutions, Hollywood, Fla., USA).

Friday, April 9, 2021 | 11:45 AM - 12:45 PM

(LIVE) Panel Discussion: Question-and-Answer Session: New Techniques and Technology

Track: New Techniques and Technology Moderator: Rishita Jaju, DMD, Reston, Virginia, USA Panelists: Jeffrey Harrison, DDS; Lawrence Kotlow, DDS; Giovanni Olivi, MD, DDS Audience: Both

New techniques and technologies in laser dentistry are an exciting topic for all new and experienced dental laser practitioners. Applications in endodontics and pediatric dental treatment and management of obstructive sleep apnea will be reviewed with experience, expertise, and best literature evidence available.

- Summarize the application of Shock Wave Enhanced Emission Photoacoustic Streaming (SWEEPS) technology for endodontic treatment.
- Review the steps in preparing the office for treatment of patients with restrictive tethered oral tissues (RTOTs).
- · Discuss dental management of sleep apnea.
- · Identify benefits, limitations, and potential risks of new applications in each field.



28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

ABSTRACTS

PHOTOBIOMODULATION

Saturday, April 10, 2021 | 9:30 AM - 10:15 AM

Effect of Photobiomodulation on Long-Standing Neurosensory Alterations of the Inferior Alveolar and Lingual Nerves

Track: Photobiomodulation
Presenter: Josep Arnabat-Dominguez, MD, DDS, PhD, Barcelona, Spain
Audience: Both

Surgical removal of the lower third molar is one of the most common oral surgical procedures. One of the complications that can occur after this type of surgery is the neurosensory alteration of the inferior alveolar nerve (IAN) and lingual nerve. Although it is not the most frequent complication (1.3%), in some cases the complication is considered permanent (0.3%). Different treatments have been proposed to reduce discomfort in patients (vitamin B complex such as vitamin B1, B6 and B12, and anti-inflammatories), but the results are not always satisfactory. The use of photobiomodulation (PBM) has been described to treat long-standing neurosensory alterations of the IAN and is generally accepted due to its minimally invasive approach. This presentation will review published studies relating to these long-standing neurosensory alterations and evaluate and describe the results of photobiomodulation therapy on the treatment of long-standing neurosensory IAN alterations after lower third molar extraction.

Educational Objectives

- Review published studies involving long-standing neurosensory alterations of the inferior alveolar and lingual nerves.
- Discover photobiomodulation treatment in long-standing neurosensory alterations of the inferior alveolar and lingual nerves.
- · Summarize results of a case series study using PBM therapy.

Laser Information: An 810-nm semiconductor GaAlAs diode laser, average power of 200 mW, continuous mode (CW), energy of 4 J, fluence of 4 J/cm2

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.

Saturday, April 10, 2021 | 10:15 AM - 11:00 AM

Using Dental Lasers to Treat the Chemotherapy Patient

Track: Photobiomodulation Presenter: Mel A. Burchman, DDS, Yardley, Pennsylvania, USA Audience: Both

I have been using lasers to treat medically compromised patients since 1998. It is the most rewarding things I have done in 45 years of practice. In July my wife was diagnosed with localized advanced pancreatic cancer and has been receiving 3 very strong chemotherapy agents including fluorouracil (5FU). This presentation will teach how to use photobiomodulation (PBM) and acupuncture to help manage many of the side effects of chemotherapy treatments. As dentists we think about oral mucositis, but patients also have chemo-related sores in other areas of the body. There are also chemo-related temporomandibular joint (TMJ) problems, a cold and tingling finger symptom, as well as problems with nausea, headaches, and stress. This presentation will cover how I use PBM to treat all of these problems. So if you know someone that is having chemotherapy-related problems and would like to be able to help them, I invite you to attend my presentation.

Educational Objectives

- · Describe how to use PBM to treat and prevent oral mucositis.
- · Learn how to use PBM and laser acupuncture to control chemo-related nausea, headaches, TMJ problems, and cold and tingling fingers.

Laser Information: Q1000 device with 660 and 808-nm tips and the 470-940 nm cluster head; MedX Home Console laser at 633 and 870 nm; MedX Rehab laser at 808 nm with 470 nm guide light (MedX Health, Mississauga, Ontario, Canada).

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.

Saturday, April 10, 2021 | 11:00 AM - 11:45 AM

Photobiomodulation in the Treatment of Facial Pain / TMD

Track: Photobiomodulation **Presenter**: Gerald Ross, DDS, Alliston, Ontario, Canada **Audience**: Both

This presentation will discuss anatomy and function of the jaw and facial muscles and a list of the various conditions causing facial pain / temporomandibular dysfunction (TMD) pain. Included is a discussion of treatment and how photobiomodulation therapy (PBMT) can play a major role in successful treatment without the use of pharmaceuticals.

Educational Objectives

Know the anatomy and function of the stomatognathic system. Identify which stomatognathic conditions to treat depending on one's level of experience. Understand the role of PBMT in these treatments. Return to your office and begin applying what you have learned.

Laser Information: Multiple laser and light-emitting diode (LED) devices will be shown.

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.

Saturday, April 10, 2021 | 11:45 AM – 12:15 PM

PBMT at Home

Track: Photobiomodulation

Presenter: Grace Sun, DDS, MALD, MAGD, MICOI, FAACD, Los Angeles, California, USA **Audience**: Both

PhotoBioModulation Treatment (PBMT), a term equivalent to Low-Level Laser Therapy (LLLT), is a therapeutic form of red and infrared (IR) light therapy that provides a wide range of therapeutic benefits. Reduction of inflammation, efficient wound healing, faster muscle recovery, increased microcirculation, accelerated lymphatic drainage, and analgesic effects are some of these benefits. PBMT can be an excellent addition to conventional dental procedures and oral surgeries due to the increased efficiency of cellular function when receiving red and IR light therapy. As diode technology has advanced in recent years, the benefits of PBMT are now available in both professional treatment facilities as well as at home. Dentists are the bridge between these two worlds. This lecture covers new concepts in red and infrared light therapy and the vital role dentists play in administering this treatment.

Academy of Laser Dentistry 2021 Annual Conference
Educational Objectives

- · Review the benefits of PBMT.
- · Explore LLLT, PBMT, laser devices, and light-emitting diode (LED) devices.
- \cdot Discuss protocols for PBMT at home.

Laser Information: 2 LED light therapy devices with the following wavelength sets: PBM Light: 630 nm, 660 nm, and 850 nm PBM Light +: 660 nm, 850 nm, and 940 nm

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.

Saturday, April 10, 2021 | 12:15 PM - 12:45 PM

State of the Art and Future of Laser-Assisted Oral Mesenchymal Stem Cells and Their Application in Dental/Medical Conditions for Tissue Engineering

Track: Photobiomodulation Presenter: Maite Moreno, DDS, MS, Tijuana, Mexico Audience: Both

Oral mesenchymal stem cells are a new emerging technology that dentists may use in regenerative medicine and dentistry. Medical and dental practitioners are including oral stem cells as a biomaterial in their practices, since they understand the improvement in general health and dental regenerative procedures that can result. The learning curve in tissue engineering is intricate due to the different stem cells in the oral cavity. This lecture will review the main laser-assisted protocols in pulp stem cells and in gingival stem cells. Multidisciplinary attention to the treatment of patients using oral stem cells will require specialized medical doctors and specialized dentists working together as a vanguard professional team in new therapeutical regenerative procedures in dentistry and medicine.

Educational Objectives:

- · Understand that laser-assisted mesenchymal stem cells is an emerging technology that will impact tissue engineering, organ engineering, and regenerative medicine and dentistry.
- · Learn how laser-assisted pulp stem cells have been used in human trials along with the dual application of laser-assisted gingival stem cells in medical and dental conditions.
- · Identify different laser wavelengths and parameters used in pulp stem cell and gingival stem cell research.

Laser Information: 904-nm infrared laser (kTV, Lasertech, San Luis Tlatilco, Naucalpan de Juárez, State of Mexico, Mexico), Class 3B, 500 mW, 180-ns pulse width, 500-4000 Hz, 3-mm diameter tip.

Saturday, April 10, 2021 | 12:45 PM - 1:15 PM

Prevention and Management of Orofacial Muscle Fatigue

Track: Photobiomodulation Presenter: Arun A. Darbar, BDS, DGDP(UK), Leighton Buzzard, Bedfordshire, United Kingdom Audience: Both

Patients attending our practices for long sessions are always apprehensive that they may not be able to cope with or help us by trying to keep their mouth open wide enough for us to complete their treatment efficiently. The reasons for this can range from strong to weak musculature, jaw joint problems, fear of gagging, and other compliance issues. Needless to mention, our dentofacial structures are one of the very personal and crucial parts of our bodies. Speech, smell, expressions, and breathing are a few of the finer sensitivities involved. Professionally we work within this area which is not always easy or a pleasant experience for our patients, hence anything we do to help goes a long way in patient care and maintenance. Dental professionals can help prevent and manage possible related treatment complications fairly easily and effectively with photobiomodulation therapy (PBMT).

Educational Objectives

- · Understand the mechanisms of muscle fatigue.
- Manage patient anxiety and prevent postoperative complications with proactive treatment management.
- \cdot Manage muscle relaxation during dental procedures with PBMT and other modalities.

Saturday, April 10, 2021 | 1:15 PM - 1:45 PM

What I Did on My COVID Break

Track: Photobiomodulation - Covid-19 Presenter: Christopher Walinski, DDS, Valhalla, New York, USA Audience: Both

The coronavirus pandemic has affected each of us in a different way. As an educator, I knew early on that my face-to-face teaching would come to an end or at least be suspended, as more businesses and "non-essential" health care facilities were ordered to close. What to do? I made the decision to accept the situation as a gift, and as with any gift, I did not want to waste it. I decided that when the shutdown ended, there would be deep regret if the gift of time had not been utilized wisely. The results of the COVID break will be presented, including a brief discussion of multiple peer-reviewed research papers. The intent is to inspire others to do the same, should another global shutdown be in our future. The studies to be discussed are in the areas of photobiomodulation therapy (PBMT) in the management of temporomandibular disorder (TMD) symptoms, the immunomodulatory activity in fibroblasts as a result of PBMT, resin cement removal from titanium dental implants, measuring speed and pulpal temperature during Class II cavity preparation using an erbium laser, comparing composite removal using a highspeed handpiece vs. erbium laser, and guidelines for soft tissue laser biopsy.

Educational Objectives

- Discuss the effects of various laser fiber shapes (end-firing, side-firing, and radial-firing) on periodontally involved root surfaces.
- · Learn whether to increase the energy per pulse or pulses per second in order to optimize speed while maintaining safe pulpal temperature during laser cavity preparation.
- · Specify the ideal parameters to debride and decontaminate ailing titanium implants with an erbium laser.

Laser Information: The lasers used in the studies to be presented include the THOR laser (THOR Photomedicine, Chesham, Buckinghamshire, United Kingdom), OraLase (MedX Cold Laser Technologies, Mississauga, Ontario, Canada), Gemini (Ultradent Products, South Jordan, Utah, USA), and Waterlase iPlus (Biolase, Foothill Ranch, Calif., USA).

Saturday, April 10, 2021 | 2:30 PM - 3:00 PM

1064-nm Nd:YAG as a Novel Wavelength for the Treatment of Oral Mucositis

Track: Photobiomodulation
Presenter: Jason Pang, BSc, BDS, MSc, Sydney, New South Wales, Australia
Audience: Both

Oral mucositis (OM) is a painful and debilitating side effect of cancer therapy that affects a large proportion of cancer patients. It remains a significant treatmentrelated toxicity with no assured means of prevention. Through the work of many researchers, clinical trials, systematic reviews, and meta-analyses, light therapy known as photobiomodulation (PBM) has been recommended by the National Institute for Health and Care Excellence (NICE) and the Multinational Association of Supportive Care in Cancer / International Society of Oral Oncology (MASCC/ ISOO) for the prevention of OM and related pain. It can improve a broad range of complications, and has an important role in supportive care. The therapy is atraumatic, well tolerated, with minimal side effects. The effective dosimetry has been reduced to a narrow range but is still not effective in all cases. Individual variation and multiple treatment parameters continue to complicate effective management. The 1064-nm Nd:YAG laser is a wavelength commonly used by dentists. More recently it has been used for PBM to treat a range of orofacial pain conditions and to improve wound healing. Using a prototype collimated flat-top profile handpiece, it was possible to simplify the PBM treatment of an oral mucositis patient. Reduced treatment time, ease of treatment and easier access to the nasopharynx were distinct advantages. In the first reported use of a 1064-nm Nd:YAG laser with a prototype handpiece for OM, results were similar to accepted PBM OM protocols and there were no complications or side effects. Rapid healing of ulceration was observed. Overall, Nd:YAG PBM therapy prevented the need for parenteral nutrition and allowed for uninterrupted continuity of cancer therapy. The 1064-nm Nd:YAG laser should be investigated as a potential wavelength for the treatment of OM.

Educational Objectives

- Appreciate that oral mucositis (OM) is a painful and debilitating side effect of cancer therapy that affects a large proportion of cancer patients.
- Learn that photobiomodulation (PBM) is the recommended treatment for the management of OM and related pain, and has an important role in supportive care.
- Discover that the 1064-nm Nd:YAG laser is a novel wavelength for the treatment of OM, with reported results that were similar to accepted PBM OM protocols without complications or side effects.

Laser Information: THOR Photomedicine LX2 (THOR Photobiomedicine, Chesham, Buckinghamshire, United Kingdom) with 69-diode LED cluster handpiece (34 x 660 nm and 35 x 850 nm diodes), 50 mW/cm², 2.5 Hz, 60 s, 3 J/cm².

PIOON S1 (PIOON, Hubei, China), 650-nm laser, 100 mW/cm², 2.5 Hz, 60 s, ~4 J/cm².

LightWalker ATS (Fotona, Ljubljana, Slovenia), 1064-nm Nd:YAG laser with prototype flat-top handpiece, 0.5 W/cm², 10 Hz, 60 s, 100- μ s pulse duration, 30 J/cm².

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.

Saturday, April 10, 2021 | 3:00 PM – 4:00 PM

(Live) Panel Discussion: Question-and-Answer Session

Track: Photobiomodulation

Moderator: James Carroll, AMInstP, FRSM

Panelists: Josep Arnabat-Dominguez, MD, DDS, PhD; Mel A. Burchman, DDS; Arun A. Darbar, BDS, DGDP(UK); Maite Moreno, DDS, MS; Jason Pang, BSc, BDS, MSc; Gerald Ross, DDS; Grace Sun, DDS, MALD, MAGD, MICOI, FAACD; Christopher Walinski, DDS

Audience: Both

Photobiomodulation (PBM) is a therapeutic light-based agent that stimulates faster and better tissue repair, reduces inflammation, reduces edema, and induces an analgesic effect. Widely used in musculoskeletal pathologies, PBM is emerging as a potential important adjunctive therapy in dentistry. For example: treatment of postoperative tissue trauma reduces the need for opioids or anti-inflammatory medication; improved neurosensory recovery after long-standing injury to the inferior alveolar nerve is routinely achieved; dentine hypersensitivity is reduced almost instantly and maintained for months after a single treatment; chronic temporomandibular disorder (TMD) is relieved where occlusal splints and medication have no beneficial effect. This session is an opportunity to ask the panel anything about PBM. They are experienced clinicians and academics on all aspects of PBM including mechanisms of action, physiological changes, clinical benefits, research evidence, treatment parameters, dose, safety, side effects, treatment reactions, contraindications, U.S. Food and Drug Administration (FDA), American Dental Association (ADA) policy, reimbursement, business and marketing matters.

Educational Objectives

 \cdot Address audience questions on PBM safety, efficacy, and legal matters.

 \cdot Learn how to add PBM to your business effectively.

Note: This presentation discusses investigational devices that have not yet received U.S. FDA approval or clearance for the specified



28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

ABSTRACTS

DR. SEIDNER RESEARCH GRANTS AND STUDENT SCHOLARSHIPS

1

GIVING FUTURE

It's an exciting time for ALD. Our impact on students and researchers has increased significantly through your donations and the growth of ALD's Dr. Eugene Seidner Student Scholarship and Grants Program.

In 2004, our goal was \$100,000. In 2012 we reached that goal. And 6 years later research grants were added. Today the funds are safeguarded to be used for future research and student scholarship.

Since inception the Program has awarded \$120,000 to honor 36 dental students in 6 countries.

Since 2018, in just 3 years, the Program has provided an additional \$56,000 is research grants to 6 researchers at 4 universities.

In 2021 we honor 5 young dentists.

The Tokyo Medical and Dental University Department of Periodontology, Graduate School of Medical and Dental Science received \$18,000 in 2019 for Dr. Sayaka Katagiri's research and \$9000 in 2021 for Dr. Yujin Ohsugi's research, both mentored by Dr. Akira Aoki

The University of Texas Health School of Dentistry at Houston Department of Periodontics and Dental Hygiene received \$11,334 for Dr. Marcos Garcia's research, mentored by Dr. Juliana Barros and Dr. Shalizeh Patel

This year's Student Scholars are

Dr. Edmond Rexha who studied at Stonybrook School of Dentistry in New York, mentored by Dr. Chris Walinski and 4th-Year Dental Student Wenbin Feng attending Touro School of Dentistry in New York, mentored by Dr. Georgios Romanos.

Student Scholars receive a small cash award plus travel and hotel accommodations typically. Since this year's meeting is virtual, each student received a \$400 cash award and a promise to cover travel and accommodations for a future in-person ALD Annual Conference.



More than 175 people have invested over \$237,000 to support laser education and research. ALD plans to offer research grants for many more years thanks to the generous donations.

Support the program and these young researchers on April 8, 2021 at 6:00 pm – 7:00 pm Eastern Daylight Time for the 28th Annual Conference research track.

We salute our Dr. Eugene Seidner winners.

DR. EUGENE SEIDNER RESEARCH GRANT RECIPIENTS

Thursday, April 8, 2021 | 6:10 PM - 6:20 PM

Novel Bone Regenerative Therapy: Sequential Microarray Analysis of Er:YAG Laser-Ablated Bone Tissue and the Modification of Gene Expression in Osteocytes and Osteoblasts

Track: Seidner Research Grants Scholar

Presenter: Yujin Ohsugi, DDS, PhD, Tokyo, Japan; Sayaka Katagiri, DDS, PhD, Tokyo Medical and Dental University Department of Periodontology, Graduate School of Medical and Dental Science, Tokyo, Japan

Audience: Both

Background: The Er:YAG laser has been applied for bone ablation during periodontal and implant surgery, anticipating advantageous effects other than just mechanical ablation. However, the effect of Er:YAG laser irradiation on bone healing remains unclear. The aim of this study was to evaluate comprehensive and sequential gene expression in laser-ablated bone, burdrilled bone, and non-treated control bone to clarify the biological responses for bone healing.

Materials and Methods: Male Wistar rat (10-week-old) calvarial bone was ablated using an Er:YAG laser (wavelength 2.94 µm; DELight, HOYA, ConBio, Fremont, Calif., USA) or steel bur (10,000 rpm) with water coolant. Groove-like bone defects were created (85 mJ/pulse, 20 Hz) for histological analysis and evaluation of bone repair ratio. The healing process was evaluated using *in vivo* micro-computed tomography (micro-CT) every 2 weeks until 8 weeks post-surgery. Sections from bone tissues were created at 24 hours, and 4 and 8 weeks after surgery. Rectangular bone defects were also created (127 mJ/pulse, 20 Hz) to evaluate gene expressions in the bone tissues. Microarray analysis at 6, 24, and 72 hours after bone ablation and quantitative polymerase chain reaction (qPCR) were performed.

Results: Er:YAG laser could effectively ablate bone tissue without major thermal changes. Laser-irradiated sites showed significantly higher bone repair ratios than bur-drilled sites at 2, 4, 6, and 8 weeks. At 6 hours, only 10 differentially expressed genes (DEGs), including SOST, were identified between bur-drilled and laser-ablated bones. The gene expression pattern was clearly different at 24 hours after bone ablation between bur-drilled and laser-ablated bones. Gene Set Enrichment Analysis showed inflammation-related gene sets

were enriched in the bur-drilled bone at 6 hours, whereas these gene sets were enriched in the laser-ablated bone at 72 hours compared to that of the control bone. No DEGs were identified between bur-drilled and laserablated bone at 72 hours. According to the results of the microarray analysis, focus was placed on the SOST, the gene that suppresses bone formation. Surprisingly, SOST expression increased in bur-drilled bone, whereas it was decreased in laser-irradiated bone, compared to the control bone at 6 hours. Immunohistochemistry revealed the signal for sclerostin (coded by SOST) was weaker in laser-ablated bone than that in bur-drilled bone at 24 hours after bone ablation.

Conclusion: This is the first study to comprehensively and sequentially evaluate gene expression in ablated bone tissue following bur drilling and Er:YAG laser irradiation. The results of this study suggest that Er:YAG laser irradiation may produce accelerated early new bone formation in laser-ablated bone through the advantageous responses and stimulate osteocytes in the bone tissue.

Educational Objectives

- Describe the differences of gene expression in bone tissues that have undergone laser ablation and bur drilling.
- \cdot Review the bioinformatic method.
- \cdot Understand bone healing after Er:YAG laser ablation.

Laser Information: A pulsed Er:YAG laser (DELight, HOYA ConBio, Fremont, Calif., USA) was used, and laser irradiation was performed at an incident angle of approximately 30° to the moistened surface in contact mode under saline solution irrigation. A curved Er:YAG laser contact tip with 600-µm diameter was used for straight line irradiation and a chisel-type contact tip with a rectangular pointed head of 1.40 mm \times 0.45 mm dimension was used for area irradiation.

Thursday, April 8, 2021 | 6:20 PM - 6:30 PM

Photobiomodulatory Suppressive Effect of a 910-nm Diode Laser on Periodontal Disease Progression in Mice

Track: Seidner Research Grants Scholar

Presenter: Sayaka Katagiri, DDS, PhD, Tokyo Medical and Dental University Department of Periodontology, Graduate School of Medical and Dental Science, Tokyo, Japan **Audience**: Both

Background: The diode laser is currently used for various treatments. However, the effect of diode laser irradiation on bacteria remains unclear. The aim of this study was to investigate the suppressive effect of diode laser irradiation on periodontal disease progression by using ligature-induced periodontitis in mice.

Materials and Methods: Wild type male C57BL/6J mice (9-week-old) were used for experiments. Gingival inflammation and loss of alveolar bone were induced by ligation of 6-0 silk ligature to the maxillary right 2nd molar teeth in mice. A diode laser (Lumix 2, Fisioline S.r.I., Borgato Molino, Italy) (wavelength 910 nm) was used at 0.2 W and 30 kHz for 7.5 minutes (total energy: 90 J) at a distance of 1 mm only on the right side, not on the left side, on 1, 3, and 5 days after ligation. In vivo micro computed tomography (CT) imaging was employed before ligation and at 8 days after ligation. DNA was extracted from both laser-irradiated and non-irradiated ligatures at 8 days after ligation. After purification and generation of the multiplexed amplicon library, paired-end sequences (250 bp) were produced by the Illumina MiSeg platform. Taxonomic classification of the sequences at the phylum, family, and genus levels were carried out against the GreenGenes database. Gingival tissue was taken from around the maxillary second molars at 3 days after ligation and homogenized. Total RNA was extracted from the excised gingival tissue, and guantitative polymerase chain reaction (gPCR) was performed.

Results: *In vivo* micro CT analysis revealed that ligation induced severe bone loss. Ligated mice irradiated by diode laser showed suppression of bone loss at 8 days after ligation. Extracted amount of DNA from the ligated ligature was decreased in the diode laser-irradiated mice compared to that in non-irradiated mice. The diversity and composition of microbiome showed no significant difference between laser-irradiated and non-irradiated ligatures. However, different microbiome compositions between the control and laser-irradiated ligatures were observed. mRNA expression in *TIMP1, SPP1, and S100A8* were changed after laser irradiation.

Conclusion: This is the first study to comprehensively evaluate the antimicrobial effect of diode laser irradiation by using a next generation sequencer. The results of this study suggest that diode laser irradiation may exert an antimicrobial effect and suppress periodontal bone loss. Novel and effective periodontal treatment with photobiomodulation will be developed.

Educational Objectives

- · Understand the effect of diode laser irradiation on periodontal disease progression by using ligature-induced periodontitis.
- \cdot Review the bioinformatic method.
- Relate the differences in the microbiome on ligature-induced periodontitis between laser irradiation and non-laser irradiation.

Laser Information: Lumix 2 diode laser (Fisioline S.r.l., Borgato Molino, Italy), 910-nm wavelength, was irradiated at 0.2 W and 30 kHz for 7.5 minutes (total energy: 90 J) at a distance of 1 mm

Thursday, April 8, 2021 | 6:30 PM – 6:40 PM

Clinical Outcomes of Adjunctive Antimicrobial Photodynamic Therapy in the Nonsurgical Treatment of Peri-Implant Disease

Track: Seidner Research Grant Scholar

Presenter: Marcos Garcia, DDS, The University of Texas Health School of Dentistry at Houston Department of Periodontics and Dental Hygiene Houston, Texas, USA **Audience**: Both

Peri-implant mucositis and peri-implantitis are caused by the development and accumulation of a bacteria biofilm around the implant, leading to a shift in bacterial species as the disease progresses. Biofilm-induced peri-implant mucositis is reversible by the removal of plaque from around the implant. The gold standard of care is the mechanical removal of plague with the use of curettes and ultrasonics. Conventional mechanical debridement of the implant surface is limited by the contaminated microstructure of the implant surface. Options of antimicrobial adjunct treatment of peri-implant inflammation include systemic antibiotics, local antibiotics, antiseptics, and laser therapy such as antimicrobial photodynamic therapy (aPDT). The advantages of aPDT are its wide antimicrobial activity, multiple applications without the risk of resistance, and the ease of its delivery to the implant surface. The null hypothesis of this investigation was that aPDT, as an adjunct treatment to mechanical debridement, will not improve clinical outcomes when compared to mechanical debridement alone. This randomized, double-blinded, controlled clinical study was designed to assess clinical improvements of aPDT as an adjunct to the gold standard of mechanical debridement in the treatment of peri-implant diseases. Thirty-four patients were recruited. Patients were randomly assigned to control (CG) or experimental groups (EG). Patients assigned to CG received traditional nonsurgical mechanical debridement with sham aPDT, and those assigned to EG received traditional nonsurgical mechanical debridement with aPDT. A 660-nm diode laser (Sirona SIROLaser Advance Plus, Dentsply Sirona, Charlotte, N.C., USA) with parameters of 10 J, 100 mW, and 100 seconds, along with a photosensitizer (methylene blue: 0.1 mg/ml) were used. Clinical measurements such as bleeding on probing, pocket depth, plague, and clinical attachment were collected at baseline, 6 and 12 weeks after treatment. The study data was analyzed with 95% confidence interval (P < 0.05).

Educational Objectives

- \cdot Explain peri-implant mucositis and peri-implantitis.
- · Define antimicrobial photodynamic therapy (aPDT) and summarize its mechanism of action.
- \cdot List the advantages of aPDT in the treatment of peri-implant mucositis and peri-implantitis.

Laser Information: 660-nm Sirona SIROLaser Advance Plus (Dentsply Sirona, Charlotte, N.C., USA.) diode laser, energy density of 10 J/site, 100 mW power, duration of irradiation 100 seconds

DR. EUGENE SEIDNER STUDENT SCHOLARSHIP RECIPIENTS

Thursday, April 8, 2021 | 6:40 PM - 6:50 PM

Peri-Implant Defect Morphology and Temperature Changes During Er,Cr:YSGG-Laser Decontamination

Track: Seidner Student Scholar Presenter: Edmond Rexha, DDS, Stony Brook School of Dental Medicine, Stony Brook, New York, USA Audience: Both

Objectives: The architecture of the peri-implant defect may affect how residual heat associated with laser irradiation is disseminated. The aim of this study was to assess the influence of intrabony defect morphology on temperature change (Δ T) of irradiated implants using an Er,Cr:YSGG laser.

Materials and Methods: Five separate defects (circumferential, one-walled, two-walled, three-walled, or horizontal defect) were created around dental implants that were placed into a synthetic (bovine) bone analog that mimics type II quality bone. Each implant surface and the surrounding bone were irradiated by a noncontact, free-running pulsed, 2780-nm Er,Cr:YSGG laser (Waterlase MD, Biolase, Irvine, Calif., USA) at 2 W power for 30 and 60 seconds. Apical and coronal thermocouples placed in contact with the implants were used to evaluate ΔT at 30 and 60 seconds. Statistical comparison was performed using statistical software. The means of (ΔT) during irradiation were compared between the five experimental groups using ANOVA 3/3 models.

Results: The most substantial temperature differences of the coronal and apical thermocouple were observed in the 2- and 3-wall defects as follows: 2-wall defect ΔT (at 30 s 2.88 ± 0.35°C coronal and 2.27 ± 0.20 apical; at 60 s 3.58 ± 0.41 coronal and 2.65 ± 0.16 apical); 3-wall defect ΔT (at 30 s 2.89 ± 0.43 coronal and 2.29 ± 0.36 apical; at 60 s 3.59 ± 0.45 coronal and 2.85 ± .65 apical); circumferential, one-wall and horizontal defects ΔT (at 30 s 0.91 ± 0.16, 2.37 ± 0.37, 0.64 ± 0.32 coronal and 0.37 ± 0.21, 1.17 ± 0.24, 0.21 ± 0.17 apical; at 60 s 1.69 ± 0.30, 3.06 ± 0.25, 1.11 ± 0.37 coronal and 0.73 ± 0.20, 1.96± 0.29, 0.51 ± 0.20 apical), respectively. All test values were shown to be statistically significant (p < 0.0001).

Conclusions: The morphology of the peri-implant defect may affect the resultant heat dissemination of Er,Cr:YSGG laser irradiation on implants. Although none of the defects resulted in a temperature change greater than the 10°C threshold, circumferential, two- and three-walled defects may have a greater risk for overheating and therefore irradiation should be kept within a 30-second period.

Educational Objectives

- \cdot Assess the influence of intrabony defect morphology on temperature change (ΔT) of irradiated implants using an Er,Cr:YSGG laser.
- Determine whether there are specific safety settings or protocols that can be established based on temperature change.

Thursday, April 8, 2021 | 6:50 PM – 7:00 PM

In Vitro Comparison of Traditional vs. Er,Cr:YSGG Laser Techniques for Interproximal Reduction in Orthodontics

Track: Seidner Student Scholar Presenter: Wenbin Feng, BS, Touro College of Dental Medicine, Hawthorne, NY, USA Audience: All

Introduction: Interproximal reduction (IPR), slenderization, or reproximation is utilized in orthodontic treatment to gain space to relieve mild-to-moderate dental crowding and to adjust from the Bolton Discrepancy [1]. IPR is the mechanical removal and recontouring of interproximal enamel surfaces. It can be utilized to create up to 8 mm of space in a dental arch [2]. There are several enamel reshaping methods. Commonly used instruments include thin metal abrasive strips, rotary diamond discs, burs, handpiece-mounted oscillating strips and segment discs. Each of these methods has its advantages and disadvantages.

Objective: The aim of this study was to evaluate the efficacy of using an erbium laser in IPR.

Materials and Methods: Fifty-four human teeth were set in stone in groups of six each (five interproximal surfaces per set). Setups included three sets of maxillary anterior teeth, three sets of mandibular anterior teeth and three sets of biscupids. Each of these setups was randomly assigned to one of three groups (n = 9). All areas were prepared to 0.3 mm of reduction, as measured with leaf gauges (Komet USA, Rock Hill, S.C., USA). IPR for Group 1, the control

group, was treated with only diamond interproximal sanding strips (Dentsply, York, Pa., USA). IPR was completed in Group 2 using only an Er,Cr:YSGG dental laser (Waterlase iPlus, Biolase, Foothill Ranch, Calif., USA). Teeth in Group 3 were also reduced with an Er,Cr:YSSG dental laser and then followed up with a diamond interproximal sanding strip. One tooth (two interproximal surfaces) were randomly selected from each of the three groups. The enamel surface morphology was to be analyzed by scanning electron microscopy (SEM) analysis, but has not been completed because of COVID-19 restrictions.

Results: Reported results include total procedure time, laser parameters, and comparison of finished surface texture. While the time difference between the erbium laser IPR (Group 2) vs. sanding strip only (Group 1) was significant ($P \le 0.005$), there was no significant difference between the time it took to use the erbium laser (Group 2) vs. using the laser followed by a sanding strip (Group 3) (P = 0.4). The difference in time between using a sanding strip alone (Group 1) vs. laser plus sanding strip (Group 3) was significant ($P \le 0.0005$). There was no significant difference between the number of strokes while using the sanding strip whether or not it was done with or without the laser. Finally, the difference in preparation time between using a new or used laser tip was not significant.

Conclusion: This project demonstrates that the usage of Er,Cr:YSSG laser energy in conjunction with thin metal polishing strips likely achieves an identical surface smoothness as metal abrasive strips alone, while taking less time and providing a safe method for IPR. We can conclude that performing IPR using an erbium laser alone or erbium laser followed by a sanding strip, the total time is significantly shorter than the conventional method of using a sanding strip alone. The difference between using an erbium laser alone and combining erbium laser with a sanding strip was not significant. Erbium lasers could be a viable treatment modality in IPR procedures.

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Educational Objectives

- Evaluate the efficacy of using an Er,Cr:YSGG laser in orthodontic interproximal reduction (IPR).
- Develop a protocol that is effective for using an Er,Cr:YSGG laser for IPR and could achieve optimum results.



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Treatment of Peri-Implantitis Using UVC Lasers

Robert Miller, MA, DDS, FACD

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Er:YAG Laser-Assisted Comprehensive Periodontal Pocket Therapy (Er-LCPT)

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The Esthetic Blend Factors: Combining Ultraconservative Veneer Rehabilitation and Laser-Assisted Periodontal Therapy

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Thursday, April 8, 2021 – General Dentistry

An *In Vitro* Comparative Scanning Electron Microscope Analysis of Desensitizing Toothpaste and Diode Laser, Alone or Coupled, for Evaluation of Dentinal Tubule Occlusion

Sara Kassem, MSc, PhD

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Novel Bone Regenerative Therapy: Sequential Microarray of Er:YAG Laser-Ablated Bone Tissue and the Modification of Gene Expression in Osteocytes and Osteoblasts

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Photobiomodulatory Suppressive Effect of a 910-nm Diode Laser on Periodontal Disease Progression in Mice

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In Vitro Comparison of Traditional vs. Er,Cr:YSGG Laser Techniques for Interproximal Reduction in Orthodontics

Wenbin Feng, BS

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Innovative Endodontics Using SWEEPS: An Update

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Laser Bacterial Reduction (LBR): Fact vs. Fiction

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Effect of Photobiomodulation on Long-Standing Neurosensory Alterations of the Inferior Alveolar and Lingual Nerves

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Photobiomodulation in the Treatment of Facial Pain / TMD

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PBMT at Home

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A Win-Win Business Model with PBMT

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Prevention and Management of Orofacial Muscle Fatigue

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1064-nm Nd:YAG as a Novel Wavelength for the Treatment of Oral Mucositis

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28th Annual Conference and Exhibition Dental Laser Solutions Sharing and Collaborating Beyond Borders

SPEAKERS

SPEAKER BIOS & DISCLOSURES

Manaf T. Agha, DDS, MD, PhD

Ajman University, Dubai, United Arab Emirates (UAE)



Dr. Agha received his DDS degree in 1996 from Aleppo University in Syria. He is a private practitioner and a senior lecturer based in Dubai. He pursued postgraduate studies in periodontology, and achieved Master in Laser Dentistry from the Medical University of Vienna. Since 2016 he has been a PhD researcher at Charles University, Department of Stomatology, in Pilsen, Czech Republic. Dr. Agha has been Head of the laser research unit at Ajman University, UAE, since 2007 to date, and teaches laser and modern technology to 5th-year students and post-graduates. He is a former Chairman of the Science and Research Committee of the Academy of Laser Dentistry. He is a co-founder and former secretary general of the International Academy for Laser Education, Vienna, Austria, and President of the Academy for Laser Education (ALE), UAE branch. Dr. Agha is an international speaker in laser dentistry, and has contributed in two books in dentistry: *Microinvasive Dentistry* by John J. Graeber, and *Principles and Practice of Laser Dentistry* (forthcoming 3rd Edition) by Robert A. Convissar.

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

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Walid Altayeb, DDS, MScD, PhD

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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 has achieved Advanced Proficiency certificates from the Academy of Laser Dentistry in 980nm diode and Er:YAG lasers. Dr. Altayeb 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, Founder and Chair of the ALD Gulf Laser Chapter, and received The John G. Sulewski Distinguished Service Award from ALD in 2019. 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, Europe, and USA as a speaker in the fields of periodontal medicine and laser dentistry. He served as the General Secretary of the iLED 2018 and 2019 Conferences and is a Lecturer for the Catholic University of the Sacred Heart Rome, Italy. He is working in private practice as a periodontist and implantologist in the Tamim Dental Polyclinic, Doha, Qatar, Dr. Imran Aestheticare Center, Dubai, UAE, and the Masters Dental and Aesthetic Center, Abu Dhabi, UAE.

Disclosure: Dr. Altayeb is a speaker in the British Academy of Implant and Restorative Dentistry and receives a modest honorarium for his educational activities. He has reported no commercial affiliations or personal conflicts of interest relative to this presentation.

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Sebastiano Andreana, DDS, MS



The State University of New York, University at Buffalo School of Dental Medicine, Buffalo, New York, USA

Dr. Andreana is Associate Professor and Director of Implant Dentistry at the University at Buffalo, School of Dental Medicine, Buffalo, New York, USA. He is the recipient of ALD's 2012 T.H. Maiman Award for Excellence in Dental Laser Research and is the recipient of the Isiah Lew Memorial Research Award from the American Academy of Implant Dentistry. Dr. Andreana is a past Board Member of the ALD, and past Chair of ALD's University and Academia Relations Committee and Science and Research Committee. He is the author of several peer-reviewed articles on lasers in dentistry.

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

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Akira Aoki, DDS, PhD

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Dr. Aoki received his DDS degree from Tokyo Medical and Dental University (TMDU), Japan in 1989. He was awarded his PhD in 1996 and currently works as Professor for Photoperiodontics in the Department of Periodontology, TMDU. He has been engaged in Er:YAG laser research since 1991. Dr. Aoki received the Best Presentation Award at the 3rd International Society for Lasers in Dentistry (ISLD) in 1992 and the 7th ISLD in 1998, and T.H. Maiman Award from the Academy of Laser Dentistry (ALD) in 2001, for excellence in Er:YAG laser research in dentistry. From 2003 to 2004, he was a Visiting Assistant Professor at the Department of Preventive and Restorative Dental Sciences, University of California San Francisco, USA. He is the President Elect of the World Federation for Laser Dentistry (WFLD).

Disclosure: Dr. Aoki received technical support from the J Morita Corp.

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Josep Arnabat-Dominguez, MD, DDS, PhD

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Dr. Arnabat-Dominguez is an Associate Professor of Oral Surgery and Co-Director of the European Master Degree in Oral Laser Applications (EMDOLA) program, Faculty of Dentistry, University of Barcelona in Spain. He is a Researcher at the IDIBELL Institute, Group of Odontological and Maxillofacial Pathology and Therapeutics, Barcelona, Spain. He is a member of the World Federation for Laser Dentistry, founder and past president of the Spanish Society of Lasers in Dentistry (SELO), founder of the Spanish Society of Oral Surgery, and member of the Spanish Society of Periodontology and Spanish Society of Dental Prostheses. As a professor he has collaborated in a number of dentistry textbooks and journal articles and has lectured in many national and international congresses.

Disclosure: Dr. Arnabat-Dominguez has reported no conflicts of interest.

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Lynn Atkinson, RDH

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Lynn Atkinson has been a Registered Dental Hygienist for 30 years. She graduated from Cypress College with a degree in Dental Hygiene in 1989 and was fortunate enough to be a part of several dental teams that incorporated state-of-the-art technology. Since obtaining the Associate Fellowship Certification through the World Clinical Laser Institute (WCLI) in 1996, Lynn has been actively applying the use of dental lasers in hygiene on a daily basis. She went on to achieve the Standard Proficiency Certification through the Academy of Laser Dentistry (ALD) in 2013 and the Advanced Proficiency Certification Parts I and II in 2019. Lynn is currently practicing four days a week and is also training hygienists and dental other team members on the use of lasers along with strategies to incorporate dental lasers into their protocol with her company, Laser Focused Hygiene. She is an active member of the Academy of Laser Dentistry, the American Dental Hygienists' Association, the California Dental Hygienists' Association, and is the Hygiene Member on the Biolase Advisory Board. She serves on the ALD Board of Directors as Auxiliary Committee Chair and is involved in the testing committee.

Disclosure: Ms. Atkinson is the Hygiene Member of the Biolase Advisory Board and is a principal in Laser Focused Hygiene.

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Kelly Blodgett, DMD, NMD, IBDM

Private Dental Practice, Portland, Oregon, USA



Dr. Blodgett maintains a holistic and integrative oral medicine practice in Portland, Oregon. Since 2016, he has prescribed Perio Trays for almost 500 patients, improving patient health and tripling production in his practice while maintaining a smaller team size. He has developed an internationally recognized niche practice catering to a clientele who value complete systemic health.

Disclosure: Dr. Blodgett has received an honorarium from Perio Protect for this presentation.

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Academy of Laser Dentistry 2021 Annual Conference

Keith Brewster, DDS

Private Dental 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

Private Practice, Yardley, Pennsylvania, USA

Dr. Burchman began using lasers in 1998 and now has eight lasers in his practice. In 2001 he received Advanced Proficiency in the Nd:YAG laser from the ALD. In November 2003 he received The Science Behind the Clinic of Laser Dentistry award for his presentation on Nd:YAG and Diode Laser Therapy in the Medically Compromised Patient. Also in 2003 his office was featured in Men's Health Magazine in "The Drill Is Gone." In 2005 he received Certified Laser Educator status from 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 and in 2012 received ALD's Leon Goldman Award for Clinical Excellence for this work. He has presented on this topic more than 60 times both nationally and internationally and it is his passion. Dr. Burchman has served the ALD as a mentor, examiner, and chairman of many committees, member of the ALD Board of Directors, Executive Committee, Secretary, Treasurer, and Vice President. He was the keynote speaker at the 2014 OCMIS Laser Conference and the 2019 ALD-BAIRD Laser Conference in Oatar. In 2015 he was the General and Scientific Chairman of the ALD conference and in 2016 the Co-Program Chair of the American Society for Laser Medicine and Surgery





(ASLMS) conference. In 2016 he received his Recognized Course Provider certification from ALD and was the Chairman of its 2019 conference. In 2018 he had the honor to testify before a Congressional Subcommittee on using dental lasers to help control opioid abuse. He was the President of the Academy of Laser Dentistry in 2020.

Disclosure: Previously Dr. Burchman has lectured for Sirona Dental, Benco Dental, Henry Schein, Advanced Dental Hygiene, and MedX Laser Health Systems and received honorariums.

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James Carroll, AMInstP, FRSM

THOR Photomedicine Ltd, Chesham, Buckinghamshire, 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. James is the recipient of the 2021 ALD T.H. Maiman Award for Excellence in Dental Laser Research.

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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Arun A. Darbar, BDS, DGDP(UK)

Smile Creations Innovations, Leighton Buzzard, Bedfordshire, United Kingdom



Dr. Arun Darbar is a multi-award-winning laser and esthetic dentist. At the forefront of laser dentistry, he has been dedicated to providing cutting-edge dentistry to his patients for over 35 years. He is an accredited member of the British Academy of Cosmetic Dentistry (BACD) and is the credentialing committee chair, a board member, and an examiner. Dr. Darbar continuously runs courses and trains dentists worldwide. He is also an invited speaker and published author on lasers in dentistry worldwide. He has been instrumental in pioneering the use of Low Level Laser Therapy (LLLT), more recently termed Photobiomodulation Therapy (PBM and PBMT), and using high-power surgical lasers with diffusers. He continues to be involved in research and development, designing and beta-testing of numerous laser units. As a leading member of the Academy of Laser Dentistry (ALD), he holds Master, Certified Educator, and Certification Course Trainer status. Professionally he serves on the ALD Board of Directors, is currently the president-elect, having previously served as the International Relations Committee Chair. Dr. Darbar co-chairs the Education and Certification committees, is an invited member of the Science and Research Committee, and also serves as an examiner. In 2018 he served as Chair of ALD General and Scientific Sessions Committee, co-chaired the same for the 2018 Implants-Laser-Esthetics-Digital (iLED) conference in Dubai, and at present is the chair for the 2021 ALD conference. He is faculty for ALD international fellowship programs. In 2017 Dr. Darbar was the recipient of the prestigious John G. Sulewski Distinguished Service Award. He is a founding member of the International Academy of Innovative Dentistry (IAID).

Disclosure: Dr. Darbar is not sponsored for this presentation but does provide education for various organizations and receives modest expenses and remuneration.

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Wenbin Feng, BS

Touro College of Dental Medicine at New York Medical College, Hawthorne, New York, USA



Wenbin Feng is a native of China and came to the United States with dreams of pursuing a career in dentistry. Before joining the Touro College of Dental Medicine, he obtained a bachelor's degree at the University of California, Los Angeles, with a major in molecular, cellular, and developmental biology. Wenbin is currently a fourth-year dental student, and the clinical exposure has drawn his attention to orthodontics. Learning with the latest technology to deliver the best patient care and sharing his experiences and skills with colleagues is particularly rewarding. His motto is "stay active and keep learning."

Disclosure: Howard A. Fine, DMD, Director of Orthodontics, Clinical Assistant Professor of Dental Medicine, and Christopher Walinski, DDS, Course Director for Lasers in Dentistry, Clinical Practice Leader, and Associate Professor of Dental Medicine, provided advice for this research project. Research materials are provided by Dr. Walinski.

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Marcos Garcia, DDS

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Dr. Garcia graduated from University of Texas School of Dentistry at Houston in 2018. He is currently a third-year resident in periodontics. He was awarded the Student Leader Scholarship, Nasjleti Periodontics Scholarship, Academy of Dental Materials Awards, The Quintessence Award for Academic Achievement and Research, and The Danny D'Anton Scholarship for Biomaterials. During his periodontics training, he has had the opportunity to apply laser technology in the treatment of periodontitis and peri-implant diseases with positive clinical outcomes. Dr. Garcia and his mentors, Drs. Juliana Barros, Shalizeh Patel, and Sridhar Eswaran, were honored to receive The Academy of Laser Dentistry's Dr. Eugene Seidner Research Grant for their project entitled *"Clinical and Microbiologic Outcomes of Adjunctive Antimicrobial Photodynamic Therapy in the Non-Surgical Treatment of Peri-Implant Disease."* *Disclosure:* Dr. Garcia has reported no relationships related to compensation or conflicts of interest.

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John J. Graeber, DMD, MAGD, MALD, 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, Erbium,Cr:YSGG, and photobiomodulatory dental lasers since 1991. He is a recognized expert in air abrasion procedures and laser diagnostic instruments. He is the co-author and editor of the text Microinvasive Dentistry: Clinical Strategies and Tools (JP Medical Publishers, 2021). An alumnus of the University of Medicine and Dentistry of New Jersey (1972), now Rutgers School of Dental Medicine, Dr. Graeber is a past president of the Tri-County Dental Society and founding member of the Metropolitan Academy of Laser Dentistry. He was elected President of the New Jersey Dental Association and has served as a member of the American Dental Association (ADA) Council on Ethics, Bylaws and Judicial Affairs, and served 14 years as 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 22 years on most laser devices. 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 a Certified Laser Educator at the Las Vegas Institute and has written 20 nationally published articles on high-tech subjects. Dr. Graeber is a founding member and Past President of the Academy of Laser Dentistry, former Chairman of Certification and Strategic Planning, and maintains an online diode laser training Web site, softtouchseminars.com. He was awarded the Leon Goldman Award for Clinical Excellence by the Academy of Laser Dentistry in 2018.

Disclosure: Dr. Graeber lectures for CAO and Ultradent lasers. He is the coauthor and editor of *Microinvasive Dentistry*: *Clinical Strategies and Tools*.

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Jeffrey Harrison, DDS

Sleep Group Solutions, Cortez, Colorado, USA



Dr. Harrison graduated from the University of Missouri, Kansas City School of Dentistry, completed a General Practice Residency at St John's Mercy Medical Center in his hometown of St Louis, Missouri, and achieved Mastership Certification in laser-assisted dentistry from the World Clinical Laser Institute. Dr. Harrison is the founder of Colorado Laser Dentistry and Sleeping Giant Sleep Solutions. Recognizing that his patients were displaying signs and symptoms of a medical condition beyond what he was taught in dental school and residency, he sought out the finest continuing education programs he could find. Realizing his observations in the mouth were related to things happening elsewhere in the body and vice versa has led him to the exciting, growing, and ever-evolving field of dental sleep medicine. Dr. Harrison joined the team of Sleep Group Solutions as a Regional Medical Director in 2020. His goal is to help as many dentists as he can to realize their vitally important role in the long-term health and longevity of their patients. Now is the time for dentistry to progress beyond fixing teeth and gums and play a larger part in improving and prolonging the lives of their patient's through a collaborative health care system.

Disclosure: Dr. Harrison is the Medical Director of Sleep Group Solutions and oversees the sales of their dental sleep medicine program for the western United States. He is also considered to be a key opinion leader for Biolase. Dr. Harrison is speaking on this topic today without receiving any honorarium from either company.

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Charles Hoopingarner, DDS, FAGD, MALD

University of Texas School of Dentistry Houston, Austin, Texas, USA



Dr. Hoopingarner attended the University of Texas Health Science Center at Houston Dental Branch, graduating with a DDS in 1973. He has maintained a private practice in Houston, Texas, and was an Adjunct Associate Professor in the Department of Anatomical Sciences for 11 years. He is currently in his 23rd year as an Associate Professor in the Department of General Practice. He was a Clinical Instructor at the Las Vegas Institute for Advanced Dental Studies from 1997 to 2007, teaching Advanced Anterior Aesthetics, Comprehensive Anterior Reconstruction, and Advanced Occlusion courses in a live patient educational format. Dr. Hoopingarner has used dental lasers as an integral part of his patient care delivery system for the last 30 years and holds Standard and Advanced Proficiency Certifications for both diode and Er:YAG lasers from the Academy of Laser Dentistry (ALD). He has attained ALD Mastership, is an ALD Recognized Course Provider, and is an ALD Past President. Dr. Hoopingarner has authored numerous articles and lectured internationally on subjects relating to the use of lasers in providing dental care.

Disclosure: Dr. Hoopingarner has reported no relevant conflicts of interest.

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Robin D. Horton, BDS

Wayside Dental Practice, Harpenden, Hertfordshire, United Kingdom



Dr. Horton is the owner and principal dentist at Wayside Dental Practice. He has been a dentist for 30 years and has used lasers for over 25 years. He has an Oral Surgery background, and is a long-time ALD member. Dr. Horton is an occasional lecturer for Nobel Biocare, Kavo-Kerr, and Optident. He is currently the Treasurer of Pandora Dental Guidance and Support, a self-help group for dentists born out of the COVID crisis. He is a General Dentist with a special interest in implants and is an ambassador for Nobel Biocare. Dr. Horton also serves as a mentor to dentists beginning their implant journey.

Disclosure: Dr. Horton lectures for Nobel Biocare, Kavo Kerr, and Optident on occasion and receives a modest honorarium and occasionally receives discounts on supplies and equipment for these activities.

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Rishita Jaju, DMD

Private Practice, Reston, Virginia, USA

Dr. Jaju is a Board-certified Pediatric Dentist in Reston, Virginia. She completed her dental education at the Harvard School of Dental Medicine and was selected for a scholarship to present her research findings at the International Association for Dental Research meeting in Hawaii. She received her specialty training in pediatric dentistry at the Children's National Medical Center in Washington, DC, where she continues to teach as a part-time clinical faculty. Dr. Jaju has achieved Mastership status and Advanced Proficiency certification from the Academy of Laser Dentistry. She has written many articles and provided seminars for introducing and promoting the benefits of laser applications in dentistry to area general dentists, pediatricians, lactation consultants, and speech pathologists.

Disclosure: Dr. Jaju has written a white paper for Biolase for which she received compensation.

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Ron Kaminer, DDS, FAGD



Private Practice, Hewlett, New York, USA

Dr. Kaminer is a 1990 graduate of the State of New York (SUNY) Buffalo School of Dental Medicine. He has always been passionate about technology and was one of the first 100 dentists in the country to include a hardtissue dental laser into his practice. Over the years Dr. Kaminer has taught dental lasers, technology, and minimally invasive dentistry to thousands of dentists worldwide. He sits on the Board of Catapult Education, is a frequent contributor to Mentor magazine, sits on the editorial board of Dental Product Shopper, and acts as a clinical consultant to numerous dental manufacturers. While doing all of the above, Dr. Kaminer practices full-time in both his offices in Hewlett and Oceanside, New York, focusing on minimally invasive and digital dentistry. He is a Fellow of the Academy of General Dentistry, member of the American Dental Association, and member of The Academy of Laser Dentistry.

Disclosure: Dr. Kaminer receives honoraria from Shofu.

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Islam Kassem, BDS, MSc, FDS RCS

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Dr. Islam Kassem is a consultant maxillofacial surgeon with special interest in facial esthetics. He graduated from the Alexandria University Faculty of Dentistry, completed his residency in maxillofacial and plastic surgery, and obtained a master's degree in oral and maxillofacial surgery. Dr. Kassem is qualified from the Royal College of Surgeons of England as Member and Fellow in Oral and Maxillofacial Surgery. He also obtained a diploma in facial aesthetics from the American Academy of Aesthetics (AAA). He has conducted more than 80 classes in facial esthetics for more than 1200 dentists and physicians in injectables and facial esthetics. These classes were conducted in 12 countries and accredited by American Dental Association Continuing Education Recognition Program (ADA CERP) and AAA. Dr. Kassem has shared his experience in facial esthetics in peer-reviewed congresses such as the International Master Course on Aging Science (IMCAS) in Paris and 12 international publications.

Disclosure: Dr. Islam Kassem has reported no conflicts of interest.

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Sara Kassem, MSc, PhD



October University for Modern Sciences and Arts, Cairo, Egypt

Dr. Sara Elbanna Kassem is a lecturer of Oral Biology at Modern Sciences and Arts University (MSA), Cairo, Egypt. She received her BSc and MSc degrees from Cairo University (2006 and 2012, respectively) and her PhD from Ain Shams University in Cairo (2018). Moreover, she received her fellowship in laser dentistry from Genoa University (Italy) in collaboration with Misr University for Science and Technology (MUST) (Egypt) in 2015. Dr. Sara Elbanna Kassem started working at MSA University in 2007 as a teacher assistant, where she was teaching the students how to carve a tooth on wax in descriptive dental anatomy labs. She also taught them how to identify any dental tissue microscopically in oral biology labs. She worked as a part-time assistant lecturer at the British University in Egypt (BUE) for two years. Her first publication is entitled "A comparative study of home and in-office bleaching procedures on human enamel color, microhardness and ultrastructure using WhiteSmile bleaching agents." In addition to teaching oral biology, Dr. Sara Elbanna Kassem works as a laser specialist in Tajmeel Polyclinics, Dr. Sherif el Hefnawy Clinic, Dr. Mahmoud Atteya Clinic, Dr. Ahmed Wagdy Clinic, Black & White Dental Clinic, Dental Care Center, and Perfecta Dental Clinic. She worked as a nutritionist at Taimeel Polyclinics for some years, where she measured the body mass index (BMI) of each patient and prescribed suitable diets for them. She can be contacted at sbanna@msa.eun.eq, Sara elbanna on Facebook, and Sara banna on LinkedIn.

Disclosure: Dr. Sara Elbanna Kassem is in private practice in Cairo, Egypt, and has no other commercial relationships.

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Sayaka Katagiri, DDS, PhD

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Dr. Katagiri received her DDS degree from Tokyo Medical and Dental University (TMDU), Tokyo, Japan, in 2003. She enrolled in the PhD program in the Department of Periodontology, TMDU, in 2004, investigating the relationship between diabetes and periodontal disease. She is a member of the Japanese Society for Laser Dentistry, Japanese Society of Periodontology, and Japanese Society of Conservative Dentistry. Her research interests include periodontal therapy and the effects of lasers on bone tissue. She published a paper about bone healing following Er:YAG laser irradiation as corresponding author.

Disclosure: Dr. Katagiri has reported no conflict of interest in this study.

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Lawrence Kotlow, DDS

Private Practice in Pediatric Dentistry, Albany, New York, USA



Dr. Kotlow is a 1972 graduate of the State University of New York (SUNY) Buffalo Dental School, and completed his pediatric dental 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 is a trainer on the Solea 9300-nm all-tissue laser for Convergent Dental, and receives honoraria for teaching and lecturing. He has a small initial offering investment in Convergent Dental. He is not receiving any honorarium for this presentation.

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Edward Kusek, DDS

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Dr. Kusek is a Diplomate of the American Board of Oral Implantology, and an Honored Fellow of American Academy of Implant Dentistry. He has achieved Mastership in the Academy of Laser Dentistry and the Academy of General Dentistry. He is an Adjunct Professor at the University of Nebraska Dental School and University of South Dakota Department of Dental Hygiene. Dr. Kusek is the 2020-2021 President of the Academy of Laser Dentistry.

Disclosure: Dr. Kusek lectures for Ultradent Products and receives an honorarium. He consults with laser companies Biolase, Great Plains Technologies, Ultradent, and Convergent Dental, and with Straumann on dental implants.

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Dr. Tb. Iman Wahyu Kusumadirja, DDS, PGDip.Impl., MM, MSc.(OCeE), MSc.(LD), CDIS



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Dr. Kusumadirja received his dental degree from The Faculty of Dentistry, Trisakti University, Jakarta, Indonesia, in 2006. He then completed a Postgraduate Master Program in Finance Management from Satyagama University, Jakarta, in 2007. Next, he graduated from The Faculty of Odonto-Stomatology, Postgraduate Diploma Certification Program in Dental Implantology & Surgery, Phnom Penh University, Phnom Penh, Cambodia, in 2008. In 2016 he graduated from The Faculty of Dentistry, Postgraduate Master Program in Implantologie, Universitätsklinikum Hamburg-Eppendorf (UKE), Hamburg, Germany, and then completed a postgraduate Diploma program in Implant Dentistry in 2019 from the Università Vita-Salute San Raffaele, Milan, Italy. Dr. Kusumadirja also graduated with honors from The Faculty of Dentistry, Postgraduate Master of Science Program in Odontoiatria Conservativa ed



Estetica (Conservative & Aesthetic Dentistry) from La Sapienza Università di Roma, Rome, Italy, in 2019, and then graduated with honors from The Faculty of Dentistry, Postgraduate Master of Science Program in Laser Dentistry, from Università Cattolica del Sacro Cuore, Rome, Italy, in 2020. He maintains a private practice in Indonesia and currently serves as chair of the ALD Study Club in Indonesia.

Disclosure: Dr. Kusumadirja has reported no conflict of interest.

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Dr. Kutsch received his undergraduate degree from Westminster College in Utah and then completed his DMD at the University of Oregon School of Dentistry in 1979. He is an inventor holding 17 patents in dentistry, author, researcher, product consultant, internationally recognized speaker, awardwinning clinician, and is past president of the Academy of Laser Dentistry and the World Congress of Minimally Invasive Dentistry. He also has served on the board of directors for the World Clinical Laser Institute and the American Academy of Cosmetic Dentistry. As an author, Dr. Kutsch has published more than 100 articles and abstracts on minimally invasive dentistry, caries risk assessment, digital radiography, and other technologies in both dental and medical journals and contributed chapters to numerous textbooks. He coauthored Balance, a textbook on dental decay with 150,000 copies in print, and just authored the patient workbook on dental caries titled Why Me? He also wrote the Rough World novels, a young adult science fiction trilogy. He serves as a reviewer for several journals including the Journal of the American Dental Association and Compendium. Dr. Kutsch also serves as CEO of Dental Alliance Holdings LLC, manufacturer of the Carifree system; CEO of Dental Safety First Inc., manufacturer of DAX; and Remin Media. As a clinician he is a Graduate, Mentor and Scientific Advisor of Dental Caries at the prestigious Kois Center. Dr. Kutsch maintains a private practice in Albany, Oregon.

Disclosure: Dr. Kutsch is CEO of two dental companies, but does not receive any honorarium for these activities. He receives discounts on products.

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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 an Advisor Member of the Pankey Institute. He is a past president of the American Academy of Periodontology and is a current officer of the Academy of Laser Dentistry. Dr. Low provides periodontists, dentists, and dental hygienists with the tools for successfully managing the periodontal patient. 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 has relationships including compensation and equipment with the following: Biolase, Florida Probe, Perioscience, and EMS.

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Kenneth Luk, BDS, DGDP(UK), MGD(CDSHK), MSc (Aachen RWTH)

Private practice, Hong Kong Special Administrative Region (SAR), China

Dr. Luk obtained his BDS at the University of Liverpool in 1987. He has incorporated lasers in dentistry since 2002. Furthering his passion in lasers, he obtained his MSc in Lasers in Dentistry at Aachen University, Germany, in 2013. Currently, he is pursuing his PhD research at the University of Hong Kong. He is active in research, publications, and education in laser dentistry.

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

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Camille Luke, RDH, MSDH

Private Practice, Tumwater, Washington, USA



Camille Luke has been practicing dental hygiene since 1992. 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 Director of Education and Clinical Development for a regional dental group, and practices clinical hygiene in Tumwater, Washington. She has presented multiple continuing education courses on topics ranging from patient care to personal and professional development. 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 works with several different organizations to provide continuing educational events for dentists and hygienists. Mrs. Luke is an active member of the American Dental Hygienists' Association (ADHA) and is the 2021 Washington State Dental Hygienists' Association (WDHA) President-Elect. She is also a member of the American Academy of Oral Systemic Health, the Academy of Laser Dentistry, and an affiliate member of the Academy of General Dentistry.

Disclosure: Mrs. Luke has reported no conflicts of interest.

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Marta Maciak, DMD, PhD



NZOZ Alfa Dental, Krakow, Poland

Dr. Maciak obtained her Doctor of Dental Medicine degree in 1999 from the Medical University of Bialystok, Poland. Between 2004 and 2009, she completed the Graduated Specialist in Endodontics and Restorative Dentistry program and obtained her PhD in medical sciences (Dermatology) from the same university. She also worked as a teaching assistant in the Department of Conservative Dentistry. Dr. Maciak completed a postgraduate studies program in esthetic medicine in 2019 as well as the International Fellowship of Academy of Laser Dentistry and Professional Diploma in Advanced Laser Dentistry BAIRD (British Academy of Implantology and Restorative Dentistry). She is the chairperson of the Poland Affiliate Study Club of the Academy of Laser Dentistry (ALD), and is an active member ALD, PTSL (Polish Society of Laser Dentistry), and PTE (Polish Endodontics Association). Additionally, she is the author of many publications in peer-reviewed journals. Dr. Maciak has been lecturing and supervising practical training for dentists in Poland and the world in the field of endodontics and esthetic dentistry. She has significant experience in the use of lasers in diagnostics, endodontic treatment, periodontology, surgery and facial esthetic medicine. Dr. Maciak has worked in different practices and currently is the company owner and lecturer of Train You Up and company owner and dentist in the Dental Practice Alfa Dental in Krakow, Poland.

Disclosure: Dr. Maciak has not received any fee for this lecture from any company.

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Robert Miller, MA, DDS, FACD

Robert J. Miller, DDS, Delray Beach, Florida, USA



Dr. Miller received his BA from New York University and MA from Hofstra University, New York, both in biology. He graduated with honors from the New York University College of Dentistry where he received the International College of Dentists Award for clinical excellence. Following graduation, he completed a residency program at Flushing Hospital and Medical Center where he was involved in all phases of dentistry including facial trauma. Dr. Miller is a Board certified Diplomate of the American Board of Oral Implantology/Implant Dentistry and Fellow of the American College of Dentists. He serves as Chairman of the Department of Oral Implantology at the Atlantic Coast Dental Research Clinic in Palm Beach and lectures on the surgical as well as reconstructive aspects of dental implantology and is director of The Center for Advanced Aesthetic and Implant Dentistry in Delray Beach, Florida.

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

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Jeanette Miranda received her associate degree in dental hygiene from Indiana University South Bend (IUSB) and her bachelor's degree in dental hygiene from Minnesota State University Mankato. She has practiced dental hygiene for 40 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 (ALD); and Dental Hygiene Implant Certification through the International Congress of Oral Implantologists. Presently, Jeanette is an ALD Trainer, substitute clinical hygienist, serves the Academy of Laser Dentistry as chair of the Communication Committee, and is a member of the Auxiliary Committee. She is a past-president for the South Dakota Dental Hygienists' Association and lectures on dental lasers.

Disclosure: Ms. Miranda has reported no conflicts of interest.

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Maite Moreno, DDS, MS



Tijuana, Mexico

Dr. Moreno completed her dental degree at the Universidad Technológica de México (UNITEC) in 1978 and the Universidad Nacional Autónoma de México (UNAM) in 1981, in Mexico City. In 1981 she completed a Master of Science in Denture Prosthodontics at the University of Michigan, Ann Arbor, Michigan. She is trained in cosmetic dentistry, veneers, crown and bridge, implant and restorative dentistry, and complete and removable partial dentures. Dr. Moreno is a member of the Academy of Osseointegration, American College of Prosthodontists, Mexican Dental Association, Colegio de Odontologos de Tijuana, AC, founder of Colegio de Implantología Bucal de Baja California (CIBBC), and was Scientific Commission Chair for the College 2008-2010, and a founding member of the Mexican Academy of Prosthodontists. Dr. Moreno is a Professor of the Prosthodontic Clinic at the Postgraduate level, Universidad de Guadalajara. She has lectured in Mexico, USA, Canada, and Europe on a variety of topics, including use of the 904-nm laser wavelength. She has published five books in dentistry and presented on the 904-nm laser wavelength for the American College of Prosthodontics in Las Vegas, Nevada, in 2013 and University of Aachen in 2018, and at the International Society for Laser Dentistry (ISLD) meeting on dentinal disinfection with the 904-nm laser: disinfection of bone tissue after dental extraction and before immediate placement of implants, peri-implantitis and necrosis with the 904-nm laser in Singapore in 2017, Rome in 2018, Los Angeles in 2018, and Aachen University in2018; state of the art and future of laser-assisted gingival mesenchymal stem cells (laGMSC) at ISLD in Plovdiv in 2019; two e-posters on regenerative tissue engineering in bone grafts at the Academy of Osseointegration, Seattle, 2020; Webinar at the Dental Continuing Education Academy, where she presented her original protocol and classification of levels of attention for COVID-19 from Level 0 to 5, where she established the application of the 904-nm laser to photobiomodulate, reduce inflammation, and disinfect the oropharynx, mouth, head and neck structures intercepting SARS-CoV-2.

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

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Hanaa Nassar, DDS, MSc, PhD

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Dr. Nassar completed her PhD in 2018 from Cairo University. She is a lecturer in the Fixed Prosthodontics Department, Ahram Canadian University, Cairo, Egypt, visiting staff of the University of Dundee, United Kingdom, and maintains a private practice in Cairo, Egypt. She is the director of Restorative and Cosmetic Department in the Arab Society for Continuous Dental Education (ASCDE), a premier continuing education society in Egypt. Dr. Nassar is a member of the American Academy of Cosmetic Dentistry, the American Academy of Implant Dentistry, and the British Society of Restorative Dentistry. She is an active researcher and has been serving as an editorial board member of journals.

Disclosure: Dr. Nassar maintains a private practice in Egypt and never had any financial or commercial support. She has reported no conflicts of interest.

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Rose Nierman, RDH

Nierman Practice Management, Tequesta, Florida, USA

Rose Nierman is a trailblazer in cross-coding in dentistry and a leading expert in her field. She is an entrepreneur, educator, and author. Ms. Nierman created one of the first manual, seminar, and software programs dedicated to helping dentists implement medical billing into their practices. Her life's work for 31 years has enabled dental practices to procure medical insurance reimbursement for their patients. Ms. Nierman is a frequent presenter at major dental continuing education conferences, teaching dentists and their teams how to get paid by medical insurance for dental sleep medicine, temporomandibular disorders (TMD), oral surgeries / implants, laser dentistry, and more. In addition, she is the speaker of Nierman Practice Management's renowned course, Cross-Coding: Unlocking the Code to Medical Billing in Dentistry, held 15+ times a year nationwide. Her journey began as a hygienist in a busy dental practice treating TMJ disorders. Rose recognized a way to successfully bill patients' medical insurance, allowing patients to receive





treatments they otherwise would not have been able to obtain. Realizing the potential to help others, she refined and documented her protocols, and in 1988 wrote her first manual "Successful Medical Insurance in Dentistry." During the same year, she founded Nierman Practice Management and began teaching other dental practices how to implement medical billing in their own practice. Her secret revolves around proper communication and documentation – knowing how to communicate with insurance companies and showing medical necessity through thorough narrative reports. Rose developed the first version of DentalWriter™ and CrossCode™ Software, which has since become a leading dental software for implementing dental sleep medicine, TMD, and medical billing. To date, she has authored 5 dental practice management manuals, over 100 articles, educated over 10,000 dental professionals, and continues to lead the cross-coding industry through her advancements in education, technology, and experience.

Disclosure: Rose Nierman is the founder and CEO of Nierman Practice Management, which provides the DentalWriter Software, a medical billing service, and CE courses. Material presented does not require the use of any software. DentalWriter is reserved as an option to reduce workload.

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Dr. Ohsugi received a DDS degree from Showa University, Tokyo, Japan, in 2014, and a PhD degree from Tokyo Medical and Dental University (TMDU), Tokyo, Japan, in 2019. He has been a Postdoctoral Researcher at TMDU since 2019. His research interests include biological effects of laser ablation. Dr. Ohsugi is a member of the Japanese Society for Laser Dentistry, Japanese Society of Periodontology, and Japanese Society of Conservative Dentistry. He is a published author on the topic of bone healing following Er:YAG laser irradiation.

Disclosure: Dr. Ohsugi has no conflicts of interest related to this study.

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Giovanni Olivi, MD,DDS

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Dr. Olivi is a 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 from the University of Florence. He achieved laser certification from the International Society for Laser Dentistry (ISLD) (2004), and Advanced Proficiency and Master status from the Academy of Laser Dentistry (ALD) (2006-2009). In 2007 Dr. Olivi received ALD's Leon Goldman Award for Clinical Excellence. He is an active member of the Italian Society of Endodontics (SIE), President of the International Academy of Innovative Dentistry (IAID), and Chair of the ALD Italy Study Club. Dr. Olivi is the scientific coordinator of the Laser Dentistry Master courses at Catholic University of Sacred Hearth of Rome. He has authored more than 70 peer-reviewed articles and 4 books on laser dentistry.

Disclosure: Dr. Prof. Olivi teaches Endodontics, Restorative Dentistry, and Pediatric Dentistry at the university level in several international universities. He is also teaching for the Laser and Health Academy (LA&HA) (Fotona) and receives a modest honorarium for these activities.

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Jason Pang, BSc, BDS, MSc

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Dr. Pang completed his Bachelor of Science (BSc) (Biomedical Science) with the University Medal with Honours from the University of Technology, Sydney, Australia; Bachelor of Dental Surgery (BDS) from the University of Sydney; Master in Laser Dentistry from the Laser Aesthetic & Health Academy, Ljubljana, Slovenia; and Master in Laser Dentistry from the Catholic University of the Sacred Heart Rome. Dr. Pang is an international speaker, educator, and author, an Australian Master trainer for Fotona, and Chairman of the Australian and New Zealand study chapter of the Academy of Laser Dentistry (ALD). He practices dentistry in Sydney, Australia.
Disclosure: Dr. Pang lectures for Fotona and receives a modest honorarium for these activities. Fotona provided prototype equipment for evaluation.

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Marina Polonsky, DDS, MSc

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Dr. Polonsky graduated from the University of Toronto, Canada, in 1999, with the Dean's Gold Medal of Achievement, and is a member of Omega Kappa Upsilon Honour Dental Society and Alpha Omega International Dental Fraternity. Since 1999, Dr. Polonsky has maintained a private general practice in Ottawa, Canada, with focus on multidisciplinary treatment utilizing lasers of different wavelengths. She has been the owner of the Alta Vista Laser Dental Centre in Ottawa, Canada since 2006. Dr. Polonsky holds a Mastership with the World Clinical Laser and Imaging (WCLI) Institute, Mastership in diode and erbium lasers from AALZ (Aachen Dental Laser Center), Master of Science in Lasers in Dentistry degree from RWTH University in Aachen, Germany, and Advanced Proficiency Certificate and Mastership with the Academy of Laser Dentistry (ALD). She is a founder of the Canadian Dental Laser Institute (CDLI), an organization dedicated to providing quality continuing education in Laser Dentistry in Canada. CDLI is the only ALD-affiliated international study club in Canada.

Dr. Polonsky is actively involved in the educational aspect of dental laser technology by teaching laser safety courses, diode and erbium certification courses, as well as lecturing worldwide on laser-assisted dentistry. She is a key opinion leader (KOL) and a Clinical Mentor for Biolase Technologies, Inc., and has been involved in the development of the newest all-tissue laser system, Waterlase Express. Dr. Polonsky is the author of multiple scientific papers, reviews and case reports on the use of lasers in dentistry. She serves on the editorial advisory boards for the *Journal of Laser-Assisted Dentistry* (JLAD) and *Lasers in Dental Science* (LIDS) by Springer. Since 2017, Dr. Polonsky has been the Chief Editor of the Laser Dentistry issue of the *Oral Health Journal* and is a member of the Executive Committee of Oral Health.

Disclosure: Dr. Polonsky consults for Biolase Technologies, serves as a Trainer, Clinical Mentor, and key opinion leader for Biolase, and is President of ALD-affiliated Canadian Study Club.

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Ms. Hunter began her career in dentistry over 17 years ago and has used lasers since her very first day as a dental hygienist. Seeing the benefit the laser provides to her patients, she now speaks, trains, and does in-office consulting while still working full-time in clinical practice. Kristin has completed her standard and advanced proficiency in lasers from the Academy of Laser Dentistry (ALD). She is a member of the ALD, American Dental Hygienists' Association, and Nevada Dental Hygienists' Association. She has spent a great amount of time volunteering in her community to promote whole-body health and dentistry, and she has also served on mission trips to Mexico with the Flying Doctors of America organization.

Disclosure: Ms. Hunter does not have financial interests with any dental manufacturer, and she does not receive commissions for the sale of any equipment. Kristin is the head of Dedicated Dental Hygiene where she receives an honorarium for conducting training. For Dedicated Dental Hygiene's public courses, sponsorship may be provided in the form of food or equipment from some companies such as, but not limited to, Ultradent, Biolase, Young Dental, Waterpik, and LumaDent.

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Edmond Rexha, DDS, MS

Naval Health Clinic, Annapolis, Maryland, USA (U.S. Naval Academy Brigade Dental Clinic)



Dr. Rexha graduated in 2001 from the U.S. Naval Academy in Annapolis, Maryland, earning a Bachelor of Science in Economics and a commission in the United States Navy as an officer. He served as a Surface Warfare Officer for 8 years including deployments in support of Operations ENDURING FREEDOM and IRAQI FREEDOM. After his initial service obligation, he redirected his focus in pursuit of a career in dentistry. Dr. Rexha earned his DDS in 2015 from New York University College of Dentistry. He then completed a General Practice residency in 2016 at the Naval Medical Center in Portsmouth, Virginia, where he earned "Resident of the Year" honors. As a dental officer on board the USS Abraham Lincoln (CVN 72), he practiced general dentistry while treating over 3000 sailors. In 2020, he completed a 3-year residency at Stony Brook University School of Dental Medicine where he received a certificate in Periodontics and Implant Dentistry as well as a master's degree in Oral Biology and Pathology. He continues to serve the nation's military as a Periodontist at the Naval Health Clinic in Annapolis, Maryland.

Dr. Rexha has been awarded Stony Brook University's Annual Sreebny Award for Research in 2019 and was a 2020 finalist of the American Academy of Periodontology (AAP) Foundation's Dr. and Mrs. Gerald M. Kramer Scholar Award for Excellence. He is actively pursuing his own research interests and continues to be involved in education. His research thus far has focused on laser dentistry and peri-implant defects. Dr. Rexha's goal is to explore various methods of laser treatment while continuing to expand his knowledge and experience with a greater understanding of this innovative technology.

Disclosure: Dr. Rexha has reported to conflicts of interest.

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Gerald Ross, DDS

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Dr. Ross has been practicing General Dentistry with a special interest in lasers and facial pain in Tottenham, Ontario, since 1971. He has been using lasers in his practice since 1992. He has given over 250 hands-on courses, lectures, and workshops on both surgical lasers as well as photobiomodulation (PBM) treatment, both nationally and internationally. He has published 15 articles and has written chapters for 2 textbooks. He also is a peer reviewer for 4 laser journals, is on the editorial board of Photobiomodulation, Photomedicine, and Laser Surgery, and has written 2 guest editorials for this journal. Dr. Ross is a past president of the North American Association for Photobiomodulation Therapy (NAALT), is a member of the Board of Directors of the Academy of Laser Dentistry (ALD), and currently chairs the Membership Committee and has also served as chair of the Certification Committee. He was the Scientific Chair of the 2019 ALD Annual Conference, Dr. Ross holds Advanced



Certification from ALD and is a member of the ALD Speakers Bureau. In 2016 he was awarded ALD's Leon Goldman Award for Clinical Excellence. An article that Dr. Ross wrote for *Dental Products Report* on treating facial pain with photobiomodulation therapy (PBMT) was just named as one of the top 5 technique articles published in 2020.

Disclosure: Dr. Ross is a member of GMA Laser Education which gives PBMT lectures for a fee.

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Hans Skjorshammer, BSc

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Mr. Skjorshammer has a Bachelor of Science degree in Psychology from Kingston University in London. As an athlete, he has played actively with FC Lyn's Football (Soccer) Teams in Oslo, Norway. He has 7 years of international business experience in Asia, Europe, and North American in the areas of education, athleticism, sales and trading (import/export). He is a cofounder and associate of Oral IQ, LLC, providing premium oral health care products and services for home use to medical professionals and educated consumers.

Disclosure: Mr. Skjorshammer is an associate and cofounder of Oral IQ, LLC.

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Mary Lynn Smith, RDH



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Mary Lynn Smith brings her knowledge, expertise, and spirit to the everyday practice of dental hygiene as well as sharing with fellow dental professionals. She has spoken on topics such as dental implant care, periodontal therapies, laser-assisted hygiene principles and techniques, and technology in dentistry. She has served on the teaching faculty of ALD Standard Proficiency courses at past conferences. In 2018 she received the ALD Leon Goldman Award which recognizes clinical excellence in laser dentistry. Published works include articles

Academy of Laser Dentistry 2021 Annual Conference

on aspects of dental hygiene and the co-authored chapter "Laser-Assisted Nonsurgical Periodontal Therapy" in the textbook *Principles and Practice of Laser Dentistry* by Dr. Robert Convissar. Mary Lynn's passion for developing other clinician's skills and inspiring them to work with excellence is evident in her teaching. She currently resides in McPherson, Kansas. She is the owner and CEO of Aspiring Dental Hygiene, LLC.

Disclosure: Ms. Smith has no financial interests associated with this presentation.

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Mr. Sulewski serves as the Director of Education and Training for The Institute for Advanced Dental Technologies, and the Director of Education for Millennium Dental Technologies. He is a member of the Academy of Laser Dentistry Awards, Certification, Communications, Conference, Education, Ethics, Laser Safety, and Scientific Sessions Committees. Having been involved in the laser dentistry field since 1989, Mr. Sulewski is a past recipient of the Academy's Distinguished Service Award, has obtained Advanced Proficiency in Nd:YAG and diode lasers as a Laser Safety Officer, and is a University of California Certified Dental Laser Educator. He is a member of the Academy of Laser Dentistry and the American Society for Laser Medicine and Surgery.

Disclosure: Mr. Sulewski is Director of Education and Training for the Institute for Advanced Dental Technologies. He also serves as Director of Education for Millennium Dental Technologies as a full-time employee with significant compensation. He has served as a paid consultant for American Dental Technologies; Continuum Biomedical; Convergent Dental; Incisive, LLC; and Millennium Dental Technologies.

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Dr. Sun graduated from the University of Southern California in 1981. She maintains a full-time comprehensive cosmetic practice and dental laboratory in Los Angeles. 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 is founder of Oral IQ, LLC, an oral healthcare and therapeutic light manufacturer.

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Dr. Triliouris graduated from New York University College of Dentistry in 1977. Since that time she has completed numerous continuing education programs at Harvard, Princeton, Boston University, New York University, and others. Lasers became her passion in 1991, the year she became a Charter member of the Academy of Laser Dentistry (ALD). Over the decades she has served on several ALD committees and as a member of the Board, culminating in her service as the 2011-2012 ALD President. She also served as chair of the ALD Dr. Eugene Seidner Student Scholarship Fund for many years. Under her guidance, the Student Scholarship program expanded to include Research Grants. Dr. Triliouris is the current chair of the Dr. Eugene Seidner Board of Trustees. She is an active member of the American Dental Association, Academy of General Dentistry, Dental Society of the State of New York, American Association of Women Dentists, and a Fellow of the Academy of Laser Dentistry. She maintains a private dental practice in Merrick, New York, and is as passionate about lasers as she was over 29 years ago. *Disclosure:* Dr. Triliouris is in private practice and has no other commercial relationships.

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Dr. Walinski is an Associate Professor in the Department of Dental Medicine at the Touro College of Dental Medicine (TCDM) in Hawthorne, New York. He serves as the Director of Laser Dentistry and is the Laser Safety Officer for TCDM. In addition to his clinical duties, he also lectures and leads lab exercises in the preclinical simulation lab in fixed prosthodontics and esthetic dentistry. Dr. Walinski has served as the Executive Director for the World Clinical Laser Institute since 2010 and is a Fellow of the International College of Dentists and the American Society for Lasers in Medicine and Surgery. Dr. Walinski is a pastpresident and Diplomate of the World Congress of Minimally Invasive Dentistry.

Disclosure: Dr. Walinski is a consultant for Biolase and receives an honorarium when speaking on their behalf.

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Angie Wallace, RDH

Private Practice, Owasso, Oklahoma, USA

Angie Wallace has been a clinical hygienist for more than 30 years and has been using lasers for 20+ years. She is a member of the Academy of Laser Dentistry (ALD), where she obtained her Advanced Level Proficiency and Educator Status, and achieved her ALD Recognized Course Provider status in 2007 and Mastership in 2008. Angie currently serves as Chair of the ALD Education Committee, Co-Chair of the Regulatory Affairs Committee, and serves on other committees for the ALD Board of Directors. She was the recipient of the John G. Sulewski Distinguished Service Award from the







Academy of Laser Dentistry in 2014. Angie has been recognized as a worldwide speaker, conducting laser courses and webinars. She also works with several laser manufacturers, making sure that their lasers are great for hygienists, and is an In-Office Laser Consultant, providing laser certification and training courses. She has several articles and chapters published about lasers and has co-authored her own book about laser hygiene. She continues to work 4 days a week in clinical dental hygiene.

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, Biolase, and Ultradent and receives honoraria.

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SPEAKER INDEX

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Speaker

Track / Topic

Agha Altayeb Andreana Aoki Arnabat-Dominguez Atkinson	Manaf T. Walid Sebastiano Akira Josep Lynn	Esthetic Dentistry Business of Dentistry, Implantology Controversies in Dentistry Implantology / Periodontology Photobiomodulation Hygiene
Blodgett	Kelly	Business of Dentistry
Brewster	Keith	Esthetic Dentistry
Burchman	Mel A	Photobiomodulation
Carroll	James	Photobiomodulation
Darbar	Arun A.	Photobiomodulation
Feng	Wenbin	Seidner Laser Research
Garcia	Marcos	Seidner Laser Research
Graeber	John J.	General Dentistry
Harrison	Jeffrey	New Techniques & Technology: Sleep-Disordered Breathing
Hoopingarner	Charles	General Dentistry
Horton	Robin D.	Implantology
Jaju	Rishita	New Techniques & Technology
Kaminer	Ron	Business of Dentistry
Kassem	Islam	Esthetic Dentistry
Kassem	Sara	General Dentistry
Katagiri	Sayaka	Seidner Laser Research
Kotlow	Lawrence	New Techniques & Technology: Pediatric Dentistry
Kusek	Edward	Business of Dentistry, Controversies in Dentistry
Kutsch	V. Kim	Business of Dentistry

Speaker

Track / Topic

Low	Samuel	Business of Dentistry, Controversies in Dentistry, Implantology
Luk	Kenneth	Esthetic Dentistry
Luke	Camille	Hygiene
Maciak	Marta	Esthetic Dentistry
Milller	Robert	Implantology
Miranda	Jeanette K.	Hygiene
Moreno	Maite	Photobiomodulation
Nassar	Hanaa	Esthetic Dentistry
Nierman	Rose	Business of Dentistry
Ohsugi Olivi	Yujin Giovanni	Seidner Laser Research New Techniques & Technology: Endodontics
Pang	Jason	Photobiomodulation
Pristavec-Hunter	Kristin	Hygiene
Rexha	Edmond	Seidner Laser Research
Ross	Gerald	Photobiomodulation
Skjorshammer	Hans	Business of Dentistry
Smith	Mary Lynn	Hygiene
Sun	Grace	Photobiomodulation
Triliouris	Ana Maria	Seidner Laser Research
Walinski	Christopher	Photobiomodulation
Wallace	Angie	Hygiene