Elevate Your Practice to New Peaks!

March 29–31, 2012
Scottsdale, AZ

19th Annual Conference & Exhibition Program

www.LaserDentistry.org
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Welcome to Scottsdale!

Share Knowledge, Acquire Education, Enjoy and Have Fun with Old and New Friends

I welcome you all to Scottsdale with great pleasure because I know that once again you will have a wonderful time learning and having fun at the 19th Annual Conference of the Academy of Laser Dentistry.

Lots of activities have been planned, lots of learning is there for the taking, and the resort is spectacular. So go ahead, meet new and old friends, learn, socialize, relax and enjoy all we have to offer.

I would also like to invite you to get involved with any of the many committees of the Academy so that you will play a part in shaping the future of laser dentistry. Find your niche within the Academy’s Leadership and join our leaders as we promote our Academy to ALD Prime entering our 20th year.

I look forward to meeting you all.

Sincerely,
Ana Maria Triliouris, DDS
President

Elevate our Practices to New Peaks.

It gives me great pleasure to welcome you to the heart of the Southwest, the Valley of the Sun, in Greater Phoenix, Arizona, surrounded by desert, cactus and soaring mountains. In this serene environment we have an opportunity to learn as well as share new concepts with one another. No one of us has all the answers; we at the ALD look to learn from one another. The educational part of our program is unsurpassed, as you will see. However, there also must be time for the three R’s: Rest, Relaxation and Rejuvenation. The beautiful Radisson Fort McDowell Resort and Casino provides a perfect place for just that!

After you get your fill of education the area offers amenities and activities second to none. From world-class golf to horseback riding, gaming tables to desert jeep tours, the Sonoran Desert has it all! Don’t miss the opportunity to touch the beauty and history of the Desert Southwest and its people of the Yavapai Nation. You will leave here refreshed and ready to move your practice to a new level of satisfaction and service. Be sure to smile and say hi to all you meet since we are all sharing in this experience together. I look forward to meeting each and every one of you and hope that you will return in our Anniversary year of 2013 with friends and colleagues to spread the word of truly improved dental care through the use of lasers.

Let the Valley of the Sun warm your heart, while our program fills your head.

Let this be the first day of the best of your life.

Sincerely,
Arthur B. Levy, DMD
2012 Conference Chairman
President-Elect
Welcome

General & Scientific Sessions Chairman

There’s something for everyone here in Scottsdale!

30 CLINICAL PRESENTATIONS | 11 SEMINARS AND WORKSHOPS
Fun in the Sun - LASER JEOPARDY, HANDS HYGIENE
13 PRESENTATIONS on Low-Level science and applications
A dedicated Hygiene day | A dedicated day for Orthodontics and Pediatric Dentistry

As part of our pre-conference certification program on Wednesday, Dr. Will Gianni, Dr. Mitch Lomke and Ms. Angie Mott, RDH will present this year’s Standard Proficiency Course. New this year is “Lasers ’101,” a 3-hour introductory course for non-users by Dr. Chuck Hoopingarner.

Dr. Gregory Altschuler, our opening session keynote speaker on Thursday, will share his experiences as a laser pioneer in the former Soviet Union and his new projects in developing the next generation of lasers. The program on Chromophores presented by Drs. Bryant and Jeffrey Cornelius should be very enlightening. Mary Lynn Smith, RDH will share insights comparing 980-nm and 10,600-nm wavelengths in non-surgical periodontal therapy. Gloria Monzon, RDH will compare the effects of 3 wavelengths on one patient years apart. Do your hands hurt? Are they cracked? Do you ever wonder about your gloves? Leslie Canham, CDA will poke some fun into these topics in her 90 minute hands-on workshop on Thursday.

Endo, anyone? Dr. Ron Porth shares his ongoing study with efficacy of lasers in the canals. Dr. Roy George will show us how newly modified optics can enhance our results. Dr. Enrico DiVito will show us the advantages of Photon-induced Photoacoustic Streaming (PIPS techniques) with Italian speaker Dr. Giovanni Olivi. Also from Italy, Dr. Felice Marmoro, Dr. Caterina Faccin and Dr. Giuseppe Bray will speak on the PIPS techniques. Dr. Mel Burchman will share an interesting case of endodontic surgery on a medically compromised patient.

Perio, anyone? Periodontists Dr. Douglas Gilio, Dr. Larry Nurin and Dr. Robert Pick will share periodontal uses in the past 21 years of practice. We will see how periodontal surgery is performed in Japan by Dr. Hisamori Hayashihara. Thursday workshops on DNA testing by Dr. Doug Gilio, diode surgery by Dr. Phil Hudson, and Keynote Presentations on Mac by Dr. Larry Kotlow round out Thursday.

Friday begins with a presentation by ALD Past President Dr. Kim Kutsch on Minimally Invasive Dentistry. Our student scholar, Ms. Jeema Dad, will share her work in a study of bond strengths to lased tooth structure. Dr. Gabi Kesler from Israel will share bone healing with erbium lasers and Dr. Larry Kotlow has some provocative thoughts about why some dentist may not get the most use out of their lasers. Dr. Peter Pang and Dr. Rick Cardoza will share restorative cases with us. Dr. Paul Silver’s hands-on diode practical workshop, and an interactive seminar with 20-year laser veteran Dr. Phil Hudson on practice management with lasers round out Friday. And there’s more….

Also on BUSY FRIDAY is the all-day Orthodontic and Pediatric Dentistry program with hands-on workshops. Our Hygienist Extravaganza is a full-day event for hygienists, both new and experienced.

Saturday features Dr. Mitch Lomke’s laser-assisted crown lengthening workshop and an all-day program on Photobiomodulation, an ALD first-time event, as well as programs in Oral Surgery. We welcome the members of the North American Association for Laser Therapy (NAALT): Dr. Praveen Arany, Mr. James Carroll, Dr. John Hendy, Dr. Mark Dinchler, Mr. Steven Liu, and Dr. Harry Whelan who will be joined by international presenters Drs. Juliana Barros and Shalizeh Patel of the University of Texas Health Science Center at Houston, Dr. Masoud Mojahedi from Germany, Dr. Claudia Caprioglio from Italy, Dr. Shally Mahajan from India, and moderator Dr. Gerry Ross from Canada.

For Saturday’s oral surgery program, Dr. Ed Kusek will present on the use of erbium laser in soft tissue grafting. Dr. Nitin Aragarwal will show how to treat oral submucosal fibrosis with diode, Er:YAG, and Nd:YAG lasers. Dr. Claus Neckel will present diode laser cases for the treatment of impacted and displaced cuspids; Dr. Jay Sher on clinical crown lengthening with the CO2 laser; Dr. Mike Kelly on depigmentation with the CO2 laser; and Dr. Larry Kotlow on erbium and Nd:YAG laser-assisted soft tissue surgery.

Last year’s hit game-show program “Laser Safety in Jeopardy” promises us lots more humor, produced by Dr. Raminta Mastis and the Laser Safety Committee.

Don’t forget the Pioneers Panel – past presidents Dr. Robert Pick, Dr. Terry Myers, Dr. Kim Kutsch will join Dr. Gregory Altschuler and Dr. Praveen Arany as they use their perspectives to peer into the future for the next 20-years of lasers in dentistry. That will lead us into our 20th anniversary celebration in 2013.

So glad you are here to “Elevate your Practice to New Peaks” with the Academy of Laser Dentistry.

Sincerely,
John J. Graeber, DMD
2012 General and Scientific Sessions Chairman
Certification Chairman

As the Certification Committee Chairman, I welcome you to our 19th annual ALD Conference.

This year’s enrollment in our Standard Proficiency course stands to surpass last year’s achievements and we are eager to announce this year’s successful candidates during Friday’s awards ceremony. I am proud to say that we recognized 29 members with successful Standard Proficiency certification in San Diego in 2011 and expect similar if not better results this year. We also recognized 4 people in various stages of their Advanced Proficiency candidacy and we plan to increase those numbers this year.

We have been listening to you. The Certification Committee has been very busy this year. We made changes that make the proficiency processes even more candidate-friendly. First, here in Scottsdale we are announcing our next AP Class of 2014. Plan to attend Saturday’s AP Review Course and Launch at 3:00 p.m. to find out more and meet others interested in the program. Talk with anyone with an “Ask me about AP” button anytime throughout the conference. We promise to create an atmosphere of collegiality so come see for yourself and join us for light refreshments while we explain all the benefits of the program. Second, we have shortened the wait-time between achieving Standard Proficiency and applying to start the Advanced Proficiency. Members may now take both the AP Review Course and Exam (previously termed AP I) and the Clinical Simulation Exam (previously termed APII) at the same time or in whichever order you choose. We have also decreased the time between achieving success in the Written Online Exam and the Simulation Exam and presenting clinical cases (formerly called APIII) to a minimum of one year. This significantly shortens the possible completion time from 5 years to 3; even 2 years is possible in situations. Third, we have recently completed a new AP Online review course which we plan to launch by May 1 for the new AP Class of 2014. These upgrades to our program should dramatically help you in achieving Advanced Proficiency. Fourth, the exam bank is under review so that we are assured the validity and accuracy of the questions remain relevant to today’s education. Fifth, we have created a subcommittee that is looking into the very different requirements for the different specialties to make the AP process more specialist-friendly.

So as you can see we have been active and listening. We are only able to accomplish this with the wonderful people on the Certification Committee. They have worked diligently to make all of this happen. I want to thank my Committee members for their many hours of hard work and dedication to the Academy. I hope you all have a wonderful experience in Scottsdale and return for many more. Please stop me and introduce yourself.

Sincerely,
Mel Burchman, DDS
Certification Chairman

Executive Director

Connect, Lead and Learn together these 3 days.

Each year we strive to plan a meeting that surpasses the previous year. We review past performance and your evaluation forms (send them in – we do rely on your replies). We scan changes in the economy and the educational needs of our members and dentistry overall. Our speakers submit abstracts of which we reviewed over 85 for Scottsdale and have 45 speakers sharing their contributions to lasers in dentistry. Please welcome them all, some new, some experienced, engage and say hello. Everyone is friendly and very willing to share.

It’s a pleasure for me to serve as the Executive Director for a group in dentistry that gives back their time and knowledge just because they want to. Whether you are a speaker or an attendee or an exhibitor, you are propelling dentistry forward. Everyone here is making a contribution to dentistry and to patient care. That’s a unique quality you all share, and it speaks volumes.

Enjoy and have fun with old and new friends. Make ALD your annual place to be for lasers in dentistry. Plans are already in the works for ALD’s 20th Anniversary Celebration Meeting in 2013, a true milestone. Stay tuned in Scottsdale for the announcements!

I welcome you and thank you for your commitment to dental laser education. Stop me and introduce yourself, if I don’t get to you first.

Sincerely,
Gail S. Siminovsky, CAE
Executive Director
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chris@visualriot.com
(561) 361-8299
Mission of our ALD 2012 Conference
To provide attendees with a positive educational and recreational experience that will leave them better equipped to provide improved patient care with increased provider satisfaction.

Academy Mission
The Academy of Laser Dentistry is an international, professional membership association of dental practitioners and supporting organizations dedicated to improving the health and well-being of patients through the proper use of laser technology. The Academy actively supports education and research through its certification programs, publications, meetings, and additional activities. The Academy fosters dialogue and seeks to build community among its members and dental organizations, educational institutions, researchers, industry representatives, and others who share this mission.

About the Academy
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. The Academy of Laser Dentistry 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.

General Information

Conference Design and Educational Methods
ALD 2012 Scottsdale, the Academy of Laser Dentistry’s 19th Annual Conference and Exhibition, is intended for educational and informational purposes to improve dental education, clinical practice, and dental research in the use of lasers in dentistry. Educational methods include lecture, discussion, demonstration, and supervised hands-on participation activities.

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

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

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 and an AGD Accepted Program Provider (FAGD/MAGD Credit). The amount of CE credit to be granted is determined according to the individual educational content of each presentation and course. Up to 29 CEU are possible for the duration of this meeting.

Up to approximately 29 CEU are possible:

<table>
<thead>
<tr>
<th>Course</th>
<th>Lecture</th>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lasers in Dentistry: Introductory Course</td>
<td>6.0</td>
<td>2.5</td>
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<tr>
<td>Standard Proficiency Course Lecture and Examinations</td>
<td>8.5</td>
<td>3.5</td>
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<tr>
<td>Advanced Proficiency Examinations</td>
<td>1.0</td>
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<tr>
<td>Lasers 101: Where Do I Start?</td>
<td>2.0</td>
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<tr>
<td>Thursday</td>
<td>4.75</td>
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<tr>
<td>Thursday Workshops</td>
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<td>3.0</td>
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<tr>
<td>Friday</td>
<td>6.5</td>
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<tr>
<td>Friday Workshops</td>
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<td>4.2</td>
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<tr>
<td>Saturday</td>
<td>5.8</td>
<td>1.5</td>
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</tbody>
</table>

Mission of our ALD 2012 Conference
To provide attendees with a positive educational and recreational experience that will leave them better equipped to provide improved patient care with increased provider satisfaction.

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About the Academy
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Disclosure of Speaker and Faculty Commercial Relationships

According to the Academy’s Conflict of Interest and Disclosure Policy, faculty and speakers for this conference are expected to disclose any economic support, personal interests, or potential bias that may be perceived as creating a conflict related to the material being presented. Disclosure statements are printed in the conference program and announced by moderators or 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 presenting the specific content of all CE activities, the Academy assumes no responsibility for the content of the presentations made by individual participants or groups of participants. Selected presentations may include exploratory research or experimental procedures and are intended for informational purposes that may lead to new interest and scientific breakthroughs in the fields of dentistry.

Copyright

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

Name Badges (Mandatory)

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

Tickets

Registrants are required to present tickets for the President’s Awards Banquet on Friday. Badges are required to receive meals.

Attire

You will want to be comfortable while your mind is abuzz, so resort casual dress is highly recommended for all educational sessions. Dress for the Friday evening President’s Awards Banquet is smart casual or cocktail attire. For men this includes trousers, cotton shirt, and a jacket if desired; for women, skirt outfits and dresses are appropriate. Be comfortable…it’s the Arizona desert!

Conference Children’s Policy

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

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

Abstracts, presenter biographies, disclosure information, and product descriptions are published for educational purposes as submitted by the respective presenters and exhibitors. They do not necessarily represent the views of the Academy of Laser Dentistry. ALD is not responsible for the opinions expressed by the presenters, exhibitors and advertisers.

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

Practitioners are advised to investigate and consider which medical devices and materials are cleared by the U.S. Food and Drug Administration for safety and efficacy and which are considered experimental, and which procedures are 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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BE SURE NOT TO MISS!

Welcome Reception
Thursday 6:00 p.m. – 8:00 p.m.
Exhibit Hall
Food, Fun and Camaraderie
Everyone Welcome!
The opening night reception is your chance to meet vendors ALD style! Food, camaraderie, friendships galore! Everyone welcome.
Thank you for providing additional products, supplies and services for ALD’s Scottsdale conference.

Dental Products Report
Innovative Optics
Joyco Multimedia
Kimberly Clarke Healthcare
Medco Instruments
Technology4Medicine
## 2012 Scottsdale Conference Program

### Wednesday March 28, 2012 Pre-Conference Day

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am—2:00 pm</td>
<td>Registration Desk Open</td>
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<tr>
<td>6:30 pm—8:30 pm</td>
<td>Registration Desk Open</td>
</tr>
<tr>
<td>7:00 am—7:30 am</td>
<td>Conference Committee 2012 &amp; 2013 Morning Meeting</td>
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<tr>
<td>Room 101</td>
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<tr>
<td>7:00 am—8:00 am</td>
<td>Continental Breakfast for Certification Program</td>
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<tr>
<td>Room Foyer</td>
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<tr>
<td>8:00 am—9:00 am</td>
<td>Continental Breakfast continues for Board of Directors Meeting</td>
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<tr>
<td>Room 110</td>
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<tr>
<td>8:00 am—5:00 pm</td>
<td><strong>Introduction to Lasers Full-Day Course</strong></td>
</tr>
<tr>
<td>Room 109</td>
<td><em>(This is Day 1 of Standard Proficiency taken as an intro course)</em></td>
</tr>
<tr>
<td></td>
<td>Mitch Lomke, DDS, Dr. Will Gianni, and Angie Mott, RDH</td>
</tr>
<tr>
<td>8:00 am—6:00 pm</td>
<td><strong>Standard Proficiency Certification</strong></td>
</tr>
<tr>
<td>Room 109</td>
<td>Mitch Lomke, DDS, Dr. Will Gianni and Angie Mott, RDH</td>
</tr>
<tr>
<td>9:00 am—5:00 pm</td>
<td>Board of Directors Meeting, Dr. Ana Triliouris</td>
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<tr>
<td>Room 110</td>
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<tr>
<td>10:00 am—12:00 pm</td>
<td><strong>ALD Advanced Proficiency Clinical Case Study Examinations</strong></td>
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<tr>
<td>Room 102</td>
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<tr>
<td>12:00 pm—1:00 pm</td>
<td>Lunch for Certification Program and ALD Leadership</td>
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<tr>
<td>Foyer and Patio</td>
<td><em>(Lunch Tickets Required)</em></td>
</tr>
<tr>
<td>1:00 pm—3:00 pm</td>
<td><strong>ALD Advanced Proficiency Clinical Simulation Examinations</strong></td>
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<tr>
<td>Rooms 104-106</td>
<td><em>(Simulations Lab)</em></td>
</tr>
<tr>
<td>4:30 pm—8:30 pm</td>
<td><strong>Lasers 101 - Where Do I Start?</strong></td>
</tr>
<tr>
<td>Room 103</td>
<td>Charles Hoopingarner, DDS, <em>Houston, TX</em></td>
</tr>
<tr>
<td>4:00 pm—5:00 pm</td>
<td>Speaker Meeting &amp; Technology Check <em>(Mandatory)</em></td>
</tr>
<tr>
<td>Room 111</td>
<td><em>Speakers, be sure to meet with AV techs prior to your presentation time.</em></td>
</tr>
<tr>
<td>5:30 pm—6:00 pm</td>
<td><strong>Laser Safety Committee Meeting</strong>, Raminta Mastis, DDS, Chair</td>
</tr>
<tr>
<td>Room 102</td>
<td></td>
</tr>
<tr>
<td>6:00 pm—6:30 pm</td>
<td><strong>Host and Moderators Meeting</strong>, Glenda Payas, DMD, Chair</td>
</tr>
<tr>
<td>Room 102</td>
<td></td>
</tr>
<tr>
<td>6:00 pm—6:30 pm</td>
<td><strong>Examiners Meeting</strong>, Mel Burchman, DDS and John Sulewski, MA</td>
</tr>
<tr>
<td>Rooms 104-106</td>
<td></td>
</tr>
<tr>
<td>6:30 pm—7:00 pm</td>
<td><strong>Conference Orientation for New Attendees</strong></td>
</tr>
<tr>
<td>Room 110</td>
<td><em>How to Get the Most Knowledge &amp; Experience Out of Your First ALD Conference</em></td>
</tr>
<tr>
<td></td>
<td>Art Levy, DMD and John Sulewski, MA</td>
</tr>
<tr>
<td>6:30 pm—8:30 pm</td>
<td>Registration Desk Open</td>
</tr>
<tr>
<td>7:00 pm—8:30 pm</td>
<td><strong>Laser Showcase Meet &amp; Greet Presentation Series</strong></td>
</tr>
<tr>
<td>Exhibit Hall</td>
<td>Charles Hoopingarner, DDS and Mary Lynn Smith, RDH</td>
</tr>
</tbody>
</table>
### Thursday March 29, 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am</td>
<td>Conference Committee 2012 &amp; 2013 Morning Meeting</td>
</tr>
<tr>
<td>7:00 am</td>
<td>Speaker Technology Check</td>
</tr>
<tr>
<td>7:00 am</td>
<td>Attendee Appreciation Continental Breakfast</td>
</tr>
<tr>
<td>7:00 am</td>
<td>Registration Desk Open</td>
</tr>
<tr>
<td>12:00 pm</td>
<td>Exhibits Open</td>
</tr>
<tr>
<td>6:00 pm</td>
<td>Welcome Reception with Exhibits Open</td>
</tr>
</tbody>
</table>

#### Morning Sessions and Workshops 8:00 am—3:00 pm

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen 1.1</td>
<td>Thermo-Optically Powered (TOP) Surgery: A New Opportunity for the Dental Practice</td>
</tr>
<tr>
<td>Rooms 109-111</td>
<td>Dr. Gregory Altshuler, Dental Photonics Inc., Walpole, MA, USA</td>
</tr>
<tr>
<td>Gen 1.2</td>
<td>How Target Chromophores Should Influence Your Laser Selection</td>
</tr>
<tr>
<td>Rooms 109-111</td>
<td>Bryant Cornelius, DDS, MBA and Jeffery Cornelius, DMD, Moab, UT, USA</td>
</tr>
<tr>
<td>Hand Hygiene Workshop - Rooms 102—103</td>
<td></td>
</tr>
<tr>
<td>10:00 am—11:30 am</td>
<td>The 1st Step in Infection Control: Hand Hygiene - A Hands-On Workshop</td>
</tr>
<tr>
<td>Rooms 102-103</td>
<td>Leslie Canham, CDA, RDA, Copperopolis, CA, USA</td>
</tr>
</tbody>
</table>

#### Parallel Sessions - Lasers in Periodontology 10:00 am—2:00 pm

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room 109</td>
<td>Douglas Gilio, DDS, University of Southern California, Los Angeles, CA, USA</td>
</tr>
<tr>
<td>Perio 1.2</td>
<td>The Use of the CO2 Laser in Soft Tissue Dental Surgery: A 30-Year Perspective</td>
</tr>
<tr>
<td>Room 109</td>
<td>Robert M. Pick, DDS, MS, Northwestern University Feinberg School of Medicine, Chicago IL, USA</td>
</tr>
<tr>
<td>Perio 1.3</td>
<td>Which Is Which? A Pilot Study Comparing the 980-nm Diode Laser and the 10,600-nm CO2 Laser in Nonsurgical Periodontal Therapy</td>
</tr>
<tr>
<td>Room 109</td>
<td>Mary Lynn Smith, RDH, BM, McPherson, KS, USA</td>
</tr>
</tbody>
</table>
| Perio with Erbium Lasers - Room 110 10:00 am—2:00 pm
| Lunch / Exhibits 12:00 pm—1:00 pm
| 10:00 am—1:30 pm | Periodontal Therapy Comparing Nd:YAG (1064 nm) Laser to a Combination Therapy of Er,Cr:YSGG (2780 nm) and Diode (810 nm) Lasers |
| Room 109  | Gloria Monzon, RDH, Milpitas, CA, USA                                                          |
| Perio 2.1 | Twenty-One Years of Laser Periodontics                                                          |
| Room 110  | Lawrence Nurin, DDS, BS, Annapolis, MD, USA                                                     |
| Perio 2.2 | Gingival Arrangement for Aesthetic Restoration with an Er,Cr:YSGG Laser                       |
| Room 110  | Hisamori Hayashihara, DDS, PhD, Hiroshima, Japan                                               |
| Perio 2.3 | Pocket Elimination, Arrangement of Adequate Gingival Form and Restoration and Furcation Treatment Without Traditional Surgery Using an Er,Cr:YSGG Laser |
| Room 110  | Hisamori Hayashihara, DDS, PhD, Hiroshima, Japan                                               |

Program Schedule (subject to change)
<table>
<thead>
<tr>
<th><strong>Endo Applications - Room 111</strong></th>
<th><strong>10:00 am—12:15 pm</strong></th>
</tr>
</thead>
</table>
| **Endo 1.1** 10:00 am—10:20 am | **A Comparison of the Success of Nd:YAG Laser Endodontic Studies to Traditional Endodontic Studies: The Ten Percent Advantage of Lasers**  
Ronald Porth, DMD, Abbotsford, British Columbia, Canada |
| Room 111 | |
| **Endo 1.2** 10:20 am—10:50 am | **Modified Fiber-Optic Designs and Their Relevance in Laser Endodontics**  
Roy George, BDS, MDS, PhD, The University of Queensland, Queensland, Brisbane, Australia |
| Room 111 | |
| **Endo 1.3** 10:50 am—11:40 am | **New Developments in Minimally Invasive Endodontics Using PIPS (Photon-Induced Photoacoustic Streaming)**  
Enrico DiVito, DDS, Arizona Center for Laser Dentistry, Scottsdale, AZ  
Giovanni Olivi, MD, DDS, University of Genoa, Genoa, Italy |
| Room 111 | |
| **Endo 1.4** 11:40 am—12:00 pm | **No Pain, No Drugs, No Stress with Photon-Induced Photoacoustic Streaming (PIPS) – Calcium Hydroxide – Subsonic Irrigation Technique (SIT)**  
Dr. Felice Marmoro, Dr. Caterina Faccin, Dr. Giuseppe Bray, Dr. Fabrizio Barresi, Italy |
| Room 111 | |
| **Endo 1.5** 12:00 pm—12:15 pm | **Using LLLT and Nd:YAG Lasers to Enable Root Canal Therapy and Hemisection Procedures on a Medically Compromised Stroke Patient with Bell’s Palsy**  
Mel Burchman, DDS, Langhorne, PA, USA |
| Room 111 | |
| **Afternoon Sessions and Workshops** | **1:30 pm—6:00 pm** |
| LLLT 0.1 Lecture | **Everyday Use of Low-Level Laser Therapy for the Dental Patient**  
Larry Lytle, BS, DDS, PhD, Rapid City, SD, USA |
| 1:30 pm—2:00 pm Room 111  
Workshop 2:00 pm—2:45 pm Room 111 | |
| 2:00 pm—3:30 pm Room 110 | **DNA Microbial Subgingival Testing Can Provide Laser Research at the Next Level**  
Douglas Gilio, DDS, University of Southern California, Los Angeles, CA, USA |
| 2:00 pm—3:30 pm Room 109 | **Diode Laser Soft Tissue Surgery: Expanding Your Services**  
Philip Hudson, DDS, Spokane, WA, USA |
| 2:00 pm—3:30 pm Room 107 | **Using Keynote (for Mac) for Presenting Your Advanced Clinical Cases, Lecturing, or Marketing your Practice (Bring your Mac Computers)**  
Lawrence Kotlow, DDS, Albany, NY, USA |
| 3:30 pm—6:30 pm Rooms 104-106 | **Standard Proficiency Clinical Exam Testing** |
| **Thursday Evening Events** | **6:00 pm—8:00 pm** |
| 6:00 pm—8:00 pm Exhibit Hall | **Welcome Reception, Everyone Welcome!**  
Join Everyone to Kick Off Our 19th Annual Conference with food, drinks, and camaraderie. |
| **Program Schedule (subject to change)** |
## Friday, March 30, 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:15 am—7:45 am</td>
<td>Standard Proficiency Online Exam</td>
</tr>
<tr>
<td>Rooms 102-103</td>
<td></td>
</tr>
<tr>
<td>7:00 am—7:30 am</td>
<td>Conference Committee 2012 &amp; 2013 Morning Meeting</td>
</tr>
<tr>
<td>7:00 am—7:45 am</td>
<td>Speaker Technology Check</td>
</tr>
<tr>
<td>7:00 am—8:00 am</td>
<td><strong>Attendee Appreciation Continental Breakfast</strong></td>
</tr>
<tr>
<td>7:00 am—4:00 pm</td>
<td>Registration Desk Open</td>
</tr>
<tr>
<td></td>
<td>Exhibits Open</td>
</tr>
<tr>
<td>9:30 am—10:00 am</td>
<td><strong>General Membership Meeting</strong></td>
</tr>
<tr>
<td>Rooms 109-110</td>
<td></td>
</tr>
</tbody>
</table>

### Parallel Sessions - Minimally Invasive Dentistry - *Rooms 109-110*

- **Minimally Invasive Dentistry: What Does the Future Look Like?**
  - V. Kim Kutsch, DMD, *Albany, OR, USA*
  - 8:00 am—9:00 am
  - Rooms 109-110
- **Dr. Eugene Seidner Student Scholarship Presentation**
  - Acid Etching, Mechanical Debridement, and Different Bonding Generations for Enamel Prepared by Er, Cr:YSGG Laser
  - Ms. Jeema Dad, *The University of Texas Health Science Center at Houston School of Dentistry, Houston, TX, USA*
  - 9:00 am—9:30 am
  - Rooms 109-110
- **General Membership Meeting**
  - 9:30 am—10:00 am
  - Rooms 109-110
- **Morning Coffee Break in Exhibit Hall**
  - 10:00 am—10:30 am

### Lasers in Implant Dentistry - *Room 109*

**Moderator: Dr. Sebastian Andreana**

- **Lasers in Implant Dentistry**
  - Sebastiano Andreana, DDS *University of Buffalo School of Dentistry, Buffalo, NY, USA*
  - 10:30 am—11:30 am
  - Room 109
- **A Team Approach to Treating Peri-Implantitis**
  - Jeanette Miranda, RDH, BS
  - 11:30 am—12:00 pm
  - Room 109

### MID Hard Tissue Applications - *Room 110*

- **Erbium Lasers: Minimally Invasive Applications**
  - Speaker TBA
  - 10:30 am—12:00 pm
  - Room 110
- **The Influence of Er:YAG Laser Irradiation on Bone Healing: Science and Clinical Applications**
  - Gabi Kesler, DMD, *Tel Aviv, Israel*
  - 11:00 am—12:00 pm
  - Room 110
- **Why Do Some Lasers Become Plant Holders and Coat Racks?**
  - Lawrence Kotlow, DDS, *Albany, NY, USA*
  - 1:00 pm—1:30 pm
  - Room 110
- **Are You Operating at Peak Performance?**
  - Peter Pang, DDS, *Sonoma, CA, USA*
  - 1:30 pm—2:30 pm
  - Room 110
- **You Think You Have Too Many Lasers? Think Again!**
  - Anthony R. Cardoza, DDS, *El Cajon, CA, USA*
  - 2:30 pm—3:30 pm
  - Room 110

*Program Schedule (subject to change)*
**Hygiene Track**

**Hygiene Applications in Every Day Dentistry — Rooms 107, 109, 104 - 106**

**Moderators: Dr. Chris Owens and Ms. Angie Mott**

**Program Schedule (subject to change)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyg 1.1</td>
<td>Introduction to Soft Tissue Lasers</td>
<td>107</td>
</tr>
<tr>
<td>8:00 am—9:00 am</td>
<td>Chris Owens, DDS, Laguna Hills, CA, USA</td>
<td></td>
</tr>
<tr>
<td>Hyg 1.2</td>
<td>The Basics of Utilizing Lasers within Scaling and Root Planing Procedure</td>
<td>107</td>
</tr>
<tr>
<td>9:00 am—10:00 am</td>
<td>Gloria Monzon, RDH, Milpitas, CA, USA</td>
<td></td>
</tr>
<tr>
<td>Hyg 1.3</td>
<td>Understanding the Science of Low-Level Lasers: The Key to Success</td>
<td>107</td>
</tr>
<tr>
<td>10:30 am—10:50 am</td>
<td>Gerry Ross, DDS, Tottenham, Ontario, Canada</td>
<td></td>
</tr>
<tr>
<td>Hyg 1.4</td>
<td>Improving Your Hands-On Skills, Always Getting Better! Hands-On Hygiene Workshop</td>
<td>107</td>
</tr>
<tr>
<td>10:50 am—12:00 pm</td>
<td>Angie Mott, RDH, Tulsa, OK, USA, Mary Lynn Smith, RDH, McPherson, KS, USA</td>
<td></td>
</tr>
<tr>
<td>Hyg 1.5</td>
<td>Periodontal Therapy Comparing Nd:YAG (1064 nm) Laser to a Combination Therapy of Er,Cr:YSGG (2780 nm) and Diode (810 nm) Lasers</td>
<td>109</td>
</tr>
<tr>
<td>1:00 pm—1:30 pm</td>
<td>Gloria Monzon, RDH, Milpitas, CA, USA</td>
<td></td>
</tr>
<tr>
<td>1:30 pm—2:00 pm</td>
<td>Mary Lynn Smith, RDH, McPherson, KS, USA</td>
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</tr>
<tr>
<td>Hyg 1.7</td>
<td>The Hygiene Forum—Panel Discussion Session</td>
<td>109</td>
</tr>
<tr>
<td>2:00 pm—3:00 pm</td>
<td>Angie Mott, RDH, Tulsa, OK, USA</td>
<td></td>
</tr>
<tr>
<td>Hyg 1.8</td>
<td>What Do I Need to Know for My Advanced Clinical Case Study for Dental Hygienists?</td>
<td>109</td>
</tr>
<tr>
<td>3:00 pm—4:00 pm</td>
<td>Angie Mott, RDH, Tulsa, OK, USA</td>
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</tbody>
</table>

**Featured Pedo Ortho Day**

**Lasers in Everyday Pedo and Orthodontic Dental Practice - Room 111**

**Chair: Dr. Margolis, Dr. Kotlow, Dr. Chmura**

**Program Schedule (subject to change)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedo 1</td>
<td>Laser Dentistry: The History, Science, and Safety</td>
<td>111</td>
</tr>
<tr>
<td>8:00 am—9:20 am</td>
<td>Fred Margolis, DDS, Buffalo Grove, IL, USA</td>
<td></td>
</tr>
<tr>
<td>Pedo 2</td>
<td>Soft Tissue Applications of Lasers in Pediatric and Orthodontic Applications</td>
<td>111</td>
</tr>
<tr>
<td>9:20 am—10:00 am</td>
<td>Giovanni Olivi, MD, DDS, University of Genoa, Genoa, Italy</td>
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<td></td>
<td>Louis Chmura, DDS, MS Marshall, MI, USA</td>
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<tr>
<td>Pedo 3</td>
<td>Using Lasers to Assist Mothers Experiencing Difficulties While Breastfeeding</td>
<td>111</td>
</tr>
<tr>
<td>10:30 am—11:15 am</td>
<td>Lawrence Kotlow, DDS, Albany, NY, USA</td>
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<tr>
<td>Pedo 4</td>
<td>Using Photobiomodulating Lasers in Children</td>
<td>111</td>
</tr>
<tr>
<td>11:15 am—11:30 am</td>
<td>Lawrence Kotlow, DDS, Albany, NY, USA</td>
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<tr>
<td>Pedo 5</td>
<td>Lasers in Dental Traumatology Offer New Treatment Possibilities</td>
<td>111</td>
</tr>
<tr>
<td>11:30 am—11:45 am</td>
<td>Giovanni Olivi, MD, DDS, University of Genoa, Genoa, Italy</td>
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</tr>
<tr>
<td>Pedo 6</td>
<td>Lasers Application in Traumatic Injuries to the Periodontal Tissues</td>
<td>111</td>
</tr>
<tr>
<td>11:45 am—12:00 pm</td>
<td>Claudia Giulia Caprioglio, DDS, Pavia, Italy</td>
<td></td>
</tr>
<tr>
<td>12:00 pm—1:30 pm</td>
<td>Lunch and Learn</td>
<td>107-108</td>
</tr>
<tr>
<td>Pedo 7</td>
<td>Uses of a Soft Tissue Diode Laser in an Orthodontic Office</td>
<td>102</td>
</tr>
<tr>
<td>1:30 pm—3:00 pm</td>
<td>Lou Chmura, DDS, MS Marshall, MI, USA, Stephen Tracey, DDS, MS, Upland, CA, USA</td>
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<td></td>
<td>Courtney Gorman, DDS Marion, IN, USA</td>
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<tr>
<td>Pedo 8</td>
<td>Hard Tissue and Pulp Procedures</td>
<td>111</td>
</tr>
<tr>
<td>1:30 pm—2:00 pm</td>
<td>Giovanni Olivi, MD, DDS, University of Genoa, Genoa, Italy</td>
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<tr>
<td>Pedo 9</td>
<td>Pulpotomies Using the 2940-nm Erbium Laser</td>
<td>111</td>
</tr>
<tr>
<td>2:00 pm—2:30 pm</td>
<td>Lawrence Kotlow, DDS, Albany, NY, USA</td>
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</tbody>
</table>

**Conference Schedule**

- Coffee Break 10:00 am—10:30 am
- Lunch 12:00 pm—1:00 pm
- Coffee Break 10:00 am—10:30 am
- Lunch and Learn / Exhibits 12:00 pm—1:30 pm

**Conference Schedule**

- Coffee Break 10:00 am—10:30 am
- Lunch 12:00 pm—1:00 pm
### Friday, March 30 (continued)

<table>
<thead>
<tr>
<th>Workshops</th>
<th>3:30 pm—5:00 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedo 10</td>
<td>Pedo Laser Hands-On Workshop</td>
</tr>
<tr>
<td>3:30 pm—5:00 pm</td>
<td>Fred Margolis, DDS, Buffalo Grove, IL, USA</td>
</tr>
<tr>
<td>Rooms 105-106</td>
<td>Lawrence Kotlow, DDS, Albany, NY, USA</td>
</tr>
<tr>
<td>Pedo 11</td>
<td>Orthodontics Laser Hands-On Workshop</td>
</tr>
<tr>
<td>3:30 pm—5:00 pm Room 104</td>
<td>Lou Chmura, DDS, Marshall, MI, USA, Stephen Tracey, DDS, MS, Upland, CA, USA</td>
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<td></td>
<td>J. Courtney Gorman, DDS, Marion, IN, USA</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Friday Afternoon Sessions and Workshops</th>
<th>1:00 pm—3:30 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 pm—2:30 pm Room 103-104</td>
<td>Diode Laser Hands-On Practical</td>
</tr>
<tr>
<td>2:00 pm—3:30 pm Room 107</td>
<td>Laser Dentistry Practice Management Made Easy</td>
</tr>
<tr>
<td>Philip Hudson, DDS, Spokane, WA, USA</td>
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<table>
<thead>
<tr>
<th>Friday Evening Events</th>
<th>7:00 pm—11:00 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 pm—8:00 pm Room 111</td>
<td>Presidents Awards Ceremony</td>
</tr>
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<td>Everyone welcome!</td>
</tr>
<tr>
<td>8:00 pm—11:00 pm</td>
<td>Presidents Awards Banquet</td>
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<td>Separate ticket applies.</td>
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### Saturday, March 31, 2012

**Program Schedule (subject to change)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>7:00 am—7:30 am</td>
<td>Conference Committee 2012 &amp; 2013 Morning Meeting</td>
</tr>
<tr>
<td>7:00 am—2:00 pm</td>
<td>Registration Desk Open</td>
</tr>
<tr>
<td>7:00 am—7:45 am</td>
<td>Speaker Technology Check</td>
</tr>
<tr>
<td>7:00 am—8:00 am</td>
<td><strong>Attendee Appreciation Continental Breakfast</strong></td>
</tr>
<tr>
<td>7:00 am—2:00 pm</td>
<td>Exhibits Open</td>
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</table>

**Saturday Morning Sessions**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</thead>
<tbody>
<tr>
<td>9:00 am—10:30 am</td>
<td><strong>Morning Workshop</strong>&lt;br&gt;The Art and Science of Laser-Assisted Soft Tissue Crown Lengthening&lt;br&gt;Mitchell Lomke, DDS, Olney, MD, USA</td>
</tr>
<tr>
<td>11:00 am—12:00 pm</td>
<td><strong>Pioneers Panel</strong>&lt;br&gt;Chair: Art Levy, DMD, Conference Chairman</td>
</tr>
</tbody>
</table>

**Photobiomodulation LLLT Current Developments - Rooms 109-110**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 am—5:00 pm</td>
<td><strong>Coffee Break 10:30 am—11:00 am</strong>&lt;br&gt;Pioneers Panel 11:00 am—12:00 pm&lt;br&gt;Lunch 12:00 pm—1:00 pm</td>
</tr>
</tbody>
</table>

**LLLT 1.0**

8:00 am—8:30 am<br>Rooms 109-110<br><br>Understanding the Science of Low-Level Lasers: An Introduction to Today’s NAALT and LLLT Track<br>Gerry Ross, DDS, Tottenham, Ontario, Canada

**LLLT 1.2**

8:30 am—8:50 am<br>Rooms 109-110<br><br>Mechanisms of Photobiomodulation Used in Dentistry<br>Praveen Arany, BDS, MDS, MMSc, PhD, Harvard University, Cambridge, MA, USA

**LLLT 1.3**

8:50 am—9:30 am<br>Rooms 109-110<br><br>Low-Level Laser Therapy (LLLT) Mechanisms and Dose Response for Tissue Repair, Inflammation and Analgesia<br>James Carroll, AMInstP, FRSM, THOR Photomedicine, Chesham, UK

**LLLT 1.4**

9:30 am—10:00 am<br>Rooms 109-110<br><br>How Useful is Low-Level Laser Therapy?<br>John Hendy, DDS, MS, Grants Pass, OR, USA

**LLLT 1.5**

10:00 am—10:30 am<br>Rooms 109-110<br><br>Efficacy of Low-Level Laser Therapy (LLLT) for the Reduction of Pain in Chronic Temporomandibular Disorders (TMD)<br>Mark Dincher, DMD, MS, Tufts Dental School, Boston, MA, USA

**LLLT 1.6**

1:10 pm—1:40 pm<br>Rooms 109-110<br><br>An Integrative Approach to Cure Chronic Soft Tissue Injury in Masseter Muscle<br>Steve Liu, LAc, BSEE, Tucson, AZ, USA

**LLLT 1.7**

1:40 pm—2:40 pm<br>Rooms 109-110<br><br>Amelioration of Oral Mucositis Pain by NASA Near-Infrared Light-Emitting Diodes in Bone Marrow Transplant Patients<br>Harry Whelam, MD, Medical College of Wisconsin, Milwaukee, WI, USA

**LLLT 1.8**

2:40 pm—3:00 pm<br>Rooms 109-110<br><br>The Effect of Laser Phototherapy (LPT) on Dental Follicle Cell Migration<br>Juliana Barros, DDS, The University of Texas School of Dentistry, Houston, TX, USA

**LLLT 1.9**

3:00 pm—3:20 pm<br>Rooms 109-110<br><br>Effects of Laser Phototherapy (LPT) and Growth Factors PDGF and BMP-2 on the Odontogenic Differentiation of Dental Pulp Stem Cells<br>Shalizeh Patel, DDS, The University of Texas School of Dentistry, Houston, TX, USA

**LLLT 1.10**

3:20 pm—3:40 pm<br>Rooms 109-110<br><br>Cellular Evaluation of Healing Cells (Fibroblasts) After Laser Radiation<br>Seyed Masoud Mojahedi Nasab, DDS, PhD, AALZ (Aachen Dental Laser Center), Aachen, Germany

**LLLT 1.11**

3:40 pm—4:00 pm<br>Rooms 109-110<br><br>Laser Applications in Traumatic Injuries to the Periodontal Tissues<br>Claudia Giulia Caprioglio, DDS, Pavia, Italy

**LLLT 1.12**

4:00 pm—4:30 pm<br>Rooms 109-110<br><br>Low-Level Laser Therapy, Truth or Fiction: A Review<br>Shally Mahajan, BDS, MDS, Vipul Srivastava, BDS, MDS; BBDCODS, Lucknow, India
# Conference Schedule

## Saturday, March 31, 2012 (continued)

### Oral Surgery Track - Room 111

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Location</th>
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<tbody>
<tr>
<td>8:00 am—8:40 am</td>
<td>OS 1.1: The Use of a Erbium Laser in the Placement of a Subepithelial Connective Tissue Graft in Natural and Implant Teeth</td>
<td></td>
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<tr>
<td>Room 111</td>
<td>Edward Kusek, DDS, Sioux Falls, SD, USA</td>
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<tr>
<td>8:40 am—9:00 am</td>
<td>OS 1.2: Laser-Assisted Crown Lengthening Procedure Enabling Tooth Preservation When Clinical Crown Length Is Compromised</td>
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<tr>
<td>Room 111</td>
<td>Jay Sher, DDS, Livingston, NJ, USA</td>
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<tr>
<td>9:00 am—9:30 am</td>
<td>OS 1.3: A Retrospective Comparison of Surgical Management Using Different Wavelength Lasers on Patients with Oral Submucous Fibrosis</td>
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<tr>
<td>Room 111</td>
<td>Nitin Agarwal, PhD, MDS, Institute of Dental and Medical Sciences, Lucknow, India</td>
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<tr>
<td>9:30 am—9:50 am</td>
<td>OS 1.4: Laser-Assisted Treatment of Impacted and Displaced Cuspids</td>
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<tr>
<td>Room 111</td>
<td>Claus Neckel, MD, DDS, Bad Neustadt, Germany</td>
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<tr>
<td>9:50 am—10:10 am</td>
<td>OS 1.5: CO2 Laser Depigmentation: A Case Presentation</td>
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<tr>
<td>Room 111</td>
<td>Michael Kelly, DMD, Scottsdale, AZ, USA</td>
<td></td>
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<tr>
<td>10:10 am—10:30 am</td>
<td>OS 1.5.1: Nd:YAG Lasers in Pigmented and White Lesions in the Oral Cavity</td>
<td></td>
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<tr>
<td>Room 111</td>
<td>Swati Gupta, BDS, MDS, Abu Banarsi Das College of Dental Sciences, Lucknow India</td>
<td></td>
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<tr>
<td>1:00 pm—2:00 pm</td>
<td>OS 1.6: Soft Tissue Surgery Using the Er:YAG (2940 nm) and Nd:YAG (1064 nm) Lasers</td>
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<tr>
<td>Room 111</td>
<td>Lawrence Kotlow, DDS, Albany, NY, USA</td>
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### Saturday Afternoon Sessions

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 pm—3:00 pm</td>
<td>2:00 pm—3:00 pm Laser Safety in Jeopardy!</td>
<td></td>
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</tr>
<tr>
<td>Room 111</td>
<td>Raminta Mastis, DDS, Laser Safety Chair, St. Clair Shores, MI, USA</td>
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<td></td>
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<tr>
<td>3:00 pm—4:00 pm</td>
<td>3:00 pm—4:00 pm Advanced Proficiency Review Discussion &amp; Wine &amp; Cheese Reception</td>
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<tr>
<td>Room 111</td>
<td>Mel Burchman, DDS, Langhorne, PA, USA</td>
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<tr>
<td></td>
<td>Charles R. Hoopingarner, DDS, Houston, TX, USA</td>
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<tr>
<td></td>
<td>Edward Kusek, DDS, Sioux Falls, SD, USA</td>
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<tr>
<td></td>
<td>Angie Mott, RDH, Tulsa, OK, USA</td>
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</tr>
</tbody>
</table>

### Saturday Late Afternoon Events

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:30—6:30 pm</td>
<td>4:30—6:30 pm 20th Anniversary Kickoff Party – Ready, Set, Climb to New Peaks!</td>
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<tr>
<td>Poolside</td>
<td>Everyone Welcome</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Morning Nature Walks and Yoga

Are you an early riser? Each morning at sunrise, enjoy an easy guided nature walk and yoga stretch outside. No previous experience necessary. Hear about the natural area, local plant knowledge and desert survival. Each day will be different. No fees required. Meeting location and time will be announced on site. It will be early enough to change and get to the meetings. Casual wear, good walking shoes (no open sandals). Take in the beautiful, cool desert sunrise. Enjoy the continental breakfast on your return to the hotel.
I just don’t get how I have new cavities after spending all that money on fillings. Did we fix it?

So even diet soda is a risk factor? I guess that makes sense. What else can I do to keep lowering my risk?

With the CariFree system…

78.35% said yes to bacterial screening and risk assessment.  
50.74% purchased suggested anti-caries products on-site.

Based on a private-practice study of 693 patients.

Is your practice ready?  
Schedule a free CAMBRA Start Training.
Visit start.carifree.com.

Don’t Miss Dr. Kim Kutsch
Friday, March 30
Keynote speaker, 8:00 am – 9:00 am
Saturday, March 31
Speaking on Pioneers Panel, 11:00 am – 12:00 pm
Thank you for supporting ALD’s certification program with your lasers.

Biolase
GPT
Henry Schein
Ivoclar Vivadent
Sirona
Technology4Medicine
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Wednesday 8:00 a.m. – 5:00 p.m., Room 109
Introduction to Lasers Full-Day Course
Mitch Lomke, DDS¹, Will Gianni, DDS², Ms. Angie Mott, RDH³
¹Private Practice, Olney, Maryland, USA; ²Private Practice, Twain Harte, California, USA; ³Tulsa, Oklahoma, USA

Attendees in the Introduction to Lasers Hands-On Course will:
• Participate in 7 hours of educational instruction.
• Participate in hands-on clinical use of many different laser devices under supervised instruction.
• Review laser physics, the fundamentals of lasers, laser safety, and infection control.
• Identify laser types, delivery systems, operating parameters, and power settings.
• Relate scientific studies of both hard and soft tissue laser applications.
• Review treatment applications.

Separate fees apply. The only prerequisite is an interest in lasers in dentistry and your willingness to participate in an intense introductory course.

Note: This course is the same as the first day of the Standard Proficiency certification course. It is intended as a very comprehensive introduction for those interested in this detail without already owning or having access to lasers.

This participation course provides a comprehensive overview and basic understanding of dental laser devices, laser physics and tissue interactions, safety and operation of a variety of lasers. The full range of diagnostic and therapeutic applications for soft tissue and hard tissue will be discussed. The course consists of lecture, case study presentations, demonstrations, and supervised hands-on participation activities. Several dental manufacturers will make dental lasers available for course participants. Interactive discussions will allow participants to gather a deeper understanding and balanced perspective on currently available dental lasers.

Course Objectives
• Become familiar with the various lasers used in dentistry.
• Learn the clinical indications for lasers including hard tissue and soft tissue applications.
• Determine how to evaluate dental lasers and how to make informed decisions about the safe and effective uses of dental laser technology for your patients.
• Work hands-on with several laser devices under controlled supervision.

Who Should Attend?
This hands-on interactive course is intended for anyone interested in or undecided about her/his interest in lasers in dentistry: General, Cosmetic, and Pediatric Dentists, Periodontists, Prosthodontists, Endodontists, Oral Surgeons, Hygienists, and auxiliary staff.

Wednesday 8:00 a.m. – 6:00 p.m., Room 109
Thursday 3:30 p.m. – 6:00 p.m. Rooms 104-106
Standard Proficiency Certification Course
Mitch Lomke, DDS¹, Will Gianni, DDS², Ms. Angie Mott, RDH³
¹Private Practice, Olney, Maryland, USA; ²Private Practice, Twain Harte, California, USA; ³Tulsa, Oklahoma, USA

This is ALD’s Standard Proficiency Certification Program. Separate fees and prerequisites apply. The Course Faculty are Dr. Will Gianni, Dr. Mitch Lomke, and Ms. Angie Mott, RDH. Examinations take place on Thursday afternoon 3:30 p.m. – 6:00 p.m. The online written exam is scheduled for Friday morning 6:15 a.m. – 7:45 a.m.

This three-day program provides a standard proficiency course according to the Curriculum Guidelines and Standards for Dental Laser Education. This course contains both lecture and hands-on learning opportunities and includes a comprehensive overview and basic understanding of all dental laser devices, laser-tissue interactions, and safety and operation of a variety of dental lasers. The full range of diagnostic and therapeutic applications for soft tissue and hard tissue will be discussed. The most frequent specific indications for use with sound scientific and clinical rationale for dental laser use will be addressed. There is a written examination and hands-on clinical simulation proficiency examination. A variety of dental lasers will be utilized with support from dental manufacturers.

Upon completion of this course, participants successfully completing both the written and clinical simulation proficiency examinations (passing grade is 75%) will be recognized as having completed the certification program for a standard proficiency dental laser course. A certificate of completion for specific dental laser devices will be sent to current or new ALD members.

Prior Skill Knowledge – Attendance at an introductory course prior to participating in Standard Proficiency Certification examinations is strongly encouraged. Access to laser devices on a regular basis will aid successful exam outcomes.
Advanced Proficiency Certification

Chair: Mel Burchman, DDS
Private Practice, Langhorne, Pennsylvania, USA

This level represents advanced knowledge and clinical experience with the dental laser. Learners for advanced level recognition will demonstrate knowledge of all laser wavelengths via an online written examination, demonstrate advanced clinical proficiency using the dental laser of their choosing in the Clinical Simulation Exam, plus dental practitioners who use the laser for treatment must prepare five (5) clinical case studies and be prepared to present a minimum of two of them at an ALD annual conference. These should be the cases with the highest degree of difficulty following the Clinical Case Study Guidelines that are provided to candidates upon application. Successful participation in all 3 parts of Advanced Proficiency is required to meet this level of education. Separate application fees and requirements apply for each part. Advanced Proficiency exceeds the standard of care for the dental professional. A Laser Safety Officer does not participate in the Clinical Case Presentation section.

Application Requirements for Advanced Proficiency

• Applicant must be a licensed dentist, hygienist, dental assistant, office manager or industry representative, etc. wishing to attain Advanced Proficiency recognition.
• Applicants must have achieved Standard level recognition approved by the Academy of Laser Dentistry.
• Applicant must be a member of the Academy of Laser Dentistry; Candidates must maintain ALD membership during the AP process and of course we hope well beyond!
• Candidates may present their Clinical Cases any time it is offered 1-year after completion of both the online exam and the clinical simulation exam. (This means there is a minimum of a 2-year preparation period before presentation of Clinical Cases if case selections were started when applying for AP. Most candidates take 3 years to complete this level of proficiency status.)
• Successful participation in all 3 parts of Advanced Proficiency is required to meet this level of education. Passing mark of 85% is required on each part. Separate applications for each part are required.

Advanced Proficiency Criteria

1. The Written Online Examination passing grade is 85%. The Written Online Examination is administered via computer. Questions are derived from content specified in the Curriculum Guidelines and Standards for Dental Laser Education. The Advanced candidate is expected to have a level of knowledge above that required for the Standard level examination. This part is administered in a proctored setting at the annual conference.
2. As a courtesy to the individual study required for success, ALD provides an Online AP Review Course. Applicants may apply for the Online Review Course and Online Written Exam and the Clinical Simulation Exam at the same time. The next written online exam will be administered in a proctored setting on February 6, 2013.
3. The Clinical Simulation Examination passing grade is 85%. The Clinical Simulation exam is administered in person during pre-conference days annually. Please reference the Clinical Simulation Guideline documents, Exam Grade Sheets, and DVD provided upon application. Candidates should be able to address all the points on the Clinical Simulation Exam grade sheet within a 30-minute time frame. Candidates are notified of their time slot approximately 1 week prior to the exam date. The next exam date is Wednesday, February 6, 2013.
4. The Clinical Case Examination (formerly called Part III) passing grade is 85%. The Clinical Case Presentation Exam is administered in person during pre-conference days annually. Clinical Case Submission Guidelines, Checklists, and Exam Grade sheets are provided upon application.
5. Passing the Online Written Examination AND the Clinical Simulation Exam is a prerequisite for presenting the Clinical Case Examination.
6. Candidates may begin documenting clinical cases and obtaining the required photographs as soon as they apply for the Advanced Proficiency Program. Close contact with the assigned mentor is strongly suggested during the preparation of your clinical cases. Strict adherence to the level of difficulty of selected cases is required.
7. Candidates must maintain ALD membership during the AP process.
8. Clinical Case Presentations must be completed within a 3-year time limit after completion of the Online Written Exam and the Clinical Simulation Exam.

Application Requirements are derived from content specified in the Curriculum Guidelines and Standards for Dental Laser Education. The Advanced candidate is expected to have a level of knowledge above that required for the Standard level examination. This part is administered in a proctored setting at the annual conference.

Preconference Programs

Lasers 101 – Where Do I Start?
Charles Hoopingarner, DDS
Private Practice, Houston, Texas, USA

Course Description
Recognize the wavelength and device most suitable to your practice. Gain a basic understanding of laser technology, dental laser wavelengths, devices, and the safe and effective use for patient care as you begin your education about dental lasers.

Attendees for this course will participate in the Laser Vendor Showcase 7:00 p.m. – 8:30 p.m.

Candidates in Lasers 101 will:
• Participate in 3 hours of educational instruction.
• Participate in hands-on demonstrations of different laser devices under supervised instruction.
• Learn the fundamentals of lasers.
• Outline laser types and delivery systems.
• Review both hard and soft tissue laser applications.
• Gain a basic understanding of lasers in everyday clinical practice.
Wednesday 6:30 p.m. – 7:00 p.m., Room 110

Conference Orientation: How to Get the Most Knowledge and Enjoyment Out of Your First ALD Conference Experience

Arthur B. Levy, DMD1, John G. Sulewski, MA2
1Private Practice, Chester, New Jersey, USA;
2The Institute for Advanced Dental Technologies, Bloomfield Hills, Michigan, USA

This presentation provides a guide to help attendees maximize their experience over the course of the conference and exhibition. What are the new attractions for 2012? What are the types of educational programs available on-site? Which ones offer an interactive, hands-on experience? Which ones present experimental usage, scientific findings, practice integration issues? What questions should you ask about instruments before purchasing? What opportunities are available for more casual and individualized interaction? What exactly does laser certification involve? For an objective view of these and other questions, plan to attend this informal session. It is designed for all participants, whether you are attending the conference for the first time, a new Academy of Laser Dentistry (ALD) member, considering purchasing your first laser, or a veteran user wishing to keep up with the latest developments. No previous knowledge of lasers is necessary.

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

Wednesday 7:00 p.m. – 8:30 p.m., Exhibit Hall

Laser Showcase Meet and Greet Presentation Series

Learn about the lasers in the marketplace today. We are having a special event at this year’s ALD meeting March 29-31 in Scottsdale. This is a “What’s new in the World of Lasers” event called the ALD Laser Meet & Greet Presentation Series where laser company vendors share what’s new in their product line in a brief product and company spotlight. The purpose is to let everyone know what’s current in an informative yet casual setting. We will have hors d’oeuvres, beverages, and lots of face time opportunities. Get a head start in this preconference meet and greet opportunity in Scottsdale.

Thursday 10:00 a.m. – 11:30 a.m., Room 102-103

The 1st Step in Infection Control: Hand Hygiene, a Hands-On Workshop

Leslie Canham, CDA, RDA
Copperopolis, California, USA

Dental professionals spend a great deal of time performing hand hygiene procedures. However, repeated use of hygienic products can cause chronic irritant contact dermatitis. Discomfort due to skin irritation can interfere with adherence to recommended hand hygiene practices. This “Hands-On” workshop is designed to help the dental professional understand how to perform hand hygiene correctly, select appropriate hand hygiene products and gloves, recognize signs of skin irritation, and locate reliable resources for hand hygiene.

Educational Objectives
1. Indicate how to protect hands and skin.
2. Recognize signs and symptoms of potentially dangerous skin conditions.
3. Define types of hand hygiene protocols and circumstances for each.
4. Relate how glove selection plays a role in comfort, irritation, and muscle strain.

Thursday 2:00 p.m. – 3:30 p.m., Room 107

Using Keynote (for Mac) for Presenting Your Advanced Clinical Cases, Lecturing, or Marketing Your Practice

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

This seminar will discuss how to use Keynote (the Mac program similar to PowerPoint) to produce good case presentations for the advanced candidate, presenting lectures, and in-house marketing of your practice.

Note: Attendees interested in this workshop should bring their Mac laptop computers.

Educational Objectives
1. Learn how to use Keynote (Mac presentation software).
2. Enumerate similarities to PowerPoint.
3. Discuss use these presentations in the in-house marketing of your practice.
4. Learn how to produce good videos and photos for use in your presentation.
Providing the gold standard periodontal care to our patients is the goal of every dental provider. Laser photodisinfection is one of the many options available in the treatment of periodontal disease. Once the microbial fingerprints have been diagnosed, the care provider has an advantage in the management of the pathogenesis.

The purpose of this presentation is to introduce dental hygienists to the benefits of DNA bacterial testing and stress the importance of identifying specific bacteria before treatment. Topics will include the latest in pocket bacterial DNA testing for the different pathogens found in the oral cavity and elsewhere in the body. Also discussed will be pathogen-sampling methods, gathering techniques using paper points to absorb microflora from different sites, and scrupulous sample placement into small glass vials to be sent for testing at the laboratory. These test results will provide a risk assessment of the peripathogens, yielding improved treatment planning, diagnosis, and best therapy options. These DNA tests and results will provide an accurate initial microbial diagnosis.

“Inconclusive research offers little regarding laser phenomena.” A controlled, parallel-designed approach is needed to compare treatment therapeutic modalities. These important test results will compare microbial levels and species taken during traditional or laser maintenance, providing scientific evidence for the hygienist to form the basis of the most appropriate diagnosis and treatment plan.

Following initial DNA testing, it is imperative that a periodic follow-up DNA test of the microbes be made by the Hygienist care provider to determine whether the periodontal disease treatment was successful or only temporary or has recurred. Following initial treatment, all perio patients must have 3-month perio maintenance. The periodic DNA retesting results will verify the etiology and pathology are at reduced risk as a result and benefit of laser or other subgingival care treatment provided by the hygienist. During the regular periodontal 3-month interval, a low-level dosage of laser energy may be provided as part of the maintenance regimen. We can use this testing protocol to compare and support our prediction, with evidence that laser technology has positive benefits equal to or better than traditional methods.

The various laser wavelengths, devices, dosages, and benefits of laser disinfection will be covered during the lecture. We will also discuss various chemotherapeutics and oral subgingival irrigants that help provide intervention of disease relationships.

This topic is aimed at laser doctors and hygienists who want an accurate measure of the progress of periodontal treatment in their practice. Does laser care reduce and provide lower microbe levels than traditional-only care? That is the question that will be addressed in this presentation. When we know our enemy, success is attainable.

Educational Objective
1. Explain the rationale for oral bacterial DNA testing in conjunction with periodontal laser therapy.

BE SURE NOT TO MISS!
Orientation to 2012 Scottsdale
Wednesday 6:30 p.m. – 7:00 p.m.

This presentation provides a guide to help attendees maximize their experience over the course of the conference and exhibition. It is designed for all participants, whether you are attending the conference for the first time, a new Academy of Laser Dentistry (ALD) member, considering purchasing your first laser, or a veteran user wishing to keep up with the latest developments. No previous knowledge of lasers is necessary. Maximize your experience during the annual conference and exhibition by targeting your attendance and participation in programs that meet your specific needs.
Friday 9:00 a.m. – 9:30 a.m., Rooms 109-110

**Dr. Eugene Seidner Student Scholarship**

**Presentation Acid Etching, Mechanical Debridement, and Different Bonding Generations for Enamel Prepared by Er,Cr:YSGG Laser**

Jeema Dad, Jacqueline Duong, BS1-2, Weiwei Wang, PhD1, Ali Obeidi, DDS, MSc, MS1

1. The University of Texas Health Science Center at Houston School of Dentistry, Houston, Texas, USA; 2. Arizona School of Dentistry and Oral Health, Mesa, Arizona, USA

Erbium lasers have shown the potential to remove dental hard tissues without, or at least fewer, associated negative stimuli than conventional methods that can cause patient discomfort, vibration, and pain. But an important issue in restoring cavities is the bond strength of composite resins to tooth structure prepared by laser. Bond strength has been reported weaker due to unfavorable microstructural changes, microfissure propagation, fused or recrystallized material formations after laser irradiation, which may affect the performance of the adhesive systems.

Based on our previous studies, we have found that mechanical and/or chemical alteration of the superficial laser-irradiated enamel surface can enhance the bonding of different bonding agents to enamel. In this, a continuation of a series of studies, we have tested 4 different bonding systems/generations to evaluate the effect of chemical/mechanical alteration: (1) Scotchbond Multi-Purpose (3M ESPE) was used as the clinical golden standard and a representative of 4th generation of Bondings (3 bottle, Acid + Primer + Bonding); (2) OptiBond FL (Kerr) as representative of 5th generation (2 bottle, Acid etch + Primer and bonding); (3) OptiBond Solo Plus (Kerr) as representative of 6th generation (2 bottle, Acid Etch and Primer + Bonding); and (4) OptiBond All-In-One (Kerr) was used to represent 7th generation (1 bottle, Acid Etch + Primer + Bonding).The purpose of this study was to evaluate the effects of extra acid etching (as chemical alteration) and/or debridement and excavation (as mechanical alteration) of enamel surface irradiated by an Er,Cr:YSGG laser in different bonding systems/generations and to compare it with conventional bur preparation.

**Method**

192 enamel samples were prepared, molded, ground, and polished. Samples were divided into 4 groups (n = 12): Bur (control), Laser only, Laser + Mechanical Excavation (Exc), and Laser + Mechanical Excavation + Acid Etching.

An Er,Cr:YSGG laser (Waterlase MD, Biolase) (λ = 2780 nm, 4.5 W, 80% water, 60% air) was used for 10 seconds on the enamel surface. Four bonding agents were used: Scotchbond Multi-Purpose (SBMP), OptiBond FL (OFL), OptiBond Solo Plus (OSP), and OptiBond All-In-One (OAO). The bonding procedures were performed in strict adherence to the manufacturers’ directions. Standard procedures for a shear bond strength (SBS) test were followed by using an Ultradent mold. Samples were then subjected to shear force (Instron®) after 24 hours storage in an incubator (37°C, 100% humidity).

<table>
<thead>
<tr>
<th>Material</th>
<th>Bonding Generation</th>
<th>Laser + Exc</th>
<th>Laser + Exc + Acid Etch</th>
<th>Bur</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBMP</td>
<td>4</td>
<td>24.25 ± 6.14</td>
<td>24.27 ± 6.70</td>
<td>20.64 ± 4.23</td>
</tr>
<tr>
<td>OFL</td>
<td>5</td>
<td>25.53 ± 4.71</td>
<td>30.24 ± 7.44</td>
<td>32.00 ± 7.01</td>
</tr>
<tr>
<td>OSP</td>
<td>6</td>
<td>27.37 ± 5.22</td>
<td>28.71 ± 7.52</td>
<td>27.32 ± 7.98</td>
</tr>
<tr>
<td>OAO</td>
<td>7</td>
<td>18.23 ± 4.27</td>
<td>15.12 ± 5.17</td>
<td>19.04 ± 5.30</td>
</tr>
</tbody>
</table>

Statistical analysis by ANOVA and Tukey test showed higher SBS for Bur than Laser-Exc-Etch in group SBMP (P = 0.0084). In contrast, group OAO, Laser + Exc + Etch showed higher SBS than the Control (P = 0.021). There was no significant difference found between other groups and techniques.

**Conclusions**

Within the limits of this in vitro study, it may be concluded that, when using bonding agents such as Scotch Bond Multi-Purpose, OptiBond FL, and OptiBond Solo Plus for bonding to Er,Cr:YSGG laser-prepared enamel, standard procedures would be enough (no more intervention required), but when using OptiBond All-In-One, extra interventions (mechanical debridement and acid etching) are required before application of bonding to achieve an optimum result.

**Educational Objectives**

1. Compare bonding strengths of different bonding generations to laser-prepared enamel.
2. Indicate effects of mechanical and/or chemical alteration on bonding to enamel irradiated by an erbium laser.
3. Discover the compatibility of techniques and materials used in this study.
4. Compare the bond strength of each bonding agent to laser-prepared enamel with its bur-prepared counterpart.
Academy of Laser Dentistry General Membership Meeting
Radisson Fort McDowell Resort

Friday 9:30 a.m. – 10:00 a.m., Rooms 109-110

ALD General Membership Meeting

Agenda

• Call to Order, Establish Quorum, Dr. Ana Triliouris, President
• Thank you and Introduction of 2011-12 Board and Chairs
• Election of Officers and Board of Directors, Dr. Art Levy, Nominations Chair

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

Nominated Officers 2012-13
Glenda Payas, DMD, President Elect
Scott Benjamin, DDS, Vice President
John Graeber, DMD, Treasurer
Gabi Kesler, DMD, Secretary

Nominated Board Members 2012-2015
Charles Hoopingarner, DDS
Edward Kusek, DDS
Jeanette K. Miranda, RDH
Steven Parrett, DDS

The President and Immediate Past President, as follows, pass automatically into these seats.
Art Levy, DMD, President
Ana Triliouris, DDS, Immediate Past President

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• Introduction of 2012 Committee Chairs, Dr. Art Levy
• New Business
• Adjournment Dr. Ana Triliouris

Friday 1:00 p.m. – 2:30 p.m., Rooms 103-104

Diode Laser Hands-On Practical

Paul Silver, DMD
Private Practice, Raymond, New Hampshire, USA

This workshop is designed for the new diode laser dentist. Basic treatments with diode lasers will be practiced. Participants will be taught and practice proper preparation of the fiber. Emphasis is placed on learning proper mode selection, finger rest, tip alignment, and hand movement during treatment. Each participant will demonstrate proper technique to the instructor using porcine specimens.

Educational Objectives
1. Express an understanding of the “why” behind specific treatment protocols.
2. Manage the fiber by properly stripping the fiber, scribing and cleaving the tips, and initiating and testing the cleave and the operation of the laser.
4. Answer questions about expected treatment outcomes.

Friday 2:00 p.m. – 3:30 p.m., Room 107

Laser Dentistry Practice Management Made Easy

Philip Hudson, DDS
Private Practice, Spokane, Washington, USA

This is a course for every dental practice that has a laser, or is thinking about getting one.

This course is designed for every member of the dental team, including the dentist, associates, hygienists, auxiliaries, business manager, and scheduler. In a program packed with pearls, the entire team will learn how to release the untapped potential of dental lasers. Dr. Hudson will demonstrate how to confidently promote your laser, how to motivate your staff, and how to turn your patients into zealous dental ambassadors for your practice. By the end of the program, your team will be energized to begin implementing subtle changes that will build the momentum to carry the practice to the next level and beyond.

Doctors and staff who take this course realize they don’t need to re-invent the wheel. They appreciate that Dr. Hudson has already tinkered with the wheel and has it properly aligned and balanced. With 21 years of experience in laser dentistry, he knows what works and what doesn’t. This course is designed to get you up and running at full speed with your laser with the tools to stay ahead of the curve as you become more comfortable with your instrument and fully integrate it into your style of practice.

Educational Objectives
1. Build confidence with lasers.
2. Develop verbal skills to motivate the team.
3. Develop a TEAM (Together Everyone Achieves More) philosophy within the practice.
4. Create laser dentistry ambassadors as the team relates to patients who have experienced laser dentistry.
Saturday 9:00 a.m. – 10:30 a.m., Rooms 104-106


Mitchell Lomke, DDS
Private Practice, Olney, Maryland, USA

This is a lecture/hands-on course that provides the clinician with insight on recognizing the clinical indications and the proper technique to be utilized when using laser technology to attain adequate clinical crown length and achieve sound tooth margins in everyday restorative and prosthetic dentistry. Diode, micropulsed CO₂, and erbium lasers will be emphasized. The basic science of these wavelengths will be reviewed. Stepwise explanations of actual clinical cases will be showcased.

Educational Objectives
1. Recognize when a clinical crown lengthening procedure is indicated and which clinical cases are appropriate for the use of dental lasers.
2. Master the proper technique for the safe and effective use of dental lasers for soft tissue crown lengthening.
3. Determine the proper postoperative management of dental laser cases.

Saturday 11:00 a.m. – 12:00 p.m.

Pioneers Panel and 2013 Launch

A new feature of this year’s conference is our Pioneers Panel of early adaptors in the field of clinical laser dentistry and restorative applications. Panelists include Dr. Terry Myers, co-inventor of the ADT 2000 Nd:YAG dental laser; Dr. Robert Pick, early adopter of CO₂ laser technology; Dr. Kim Kutsch, early adopter of lasers and co-founder of the World Congress of Minimally Invasive Dentistry; Dr. Praveen Arany of Harvard University researcher on LLLT and Dr. Greg Altschuler, developer of a new diode laser. Plan to attend to hear a lively discussion where participants provide a valuable perspective on where lasers in dentistry began, what has happened to get where we are today and what needs to be done to move to the next level for worldwide laser use and acceptance in dentistry.

Saturday 2:00 p.m. – 3:00 p.m., Room 111

Laser Safety in Jeopardy!

Raminta Mastis, DDS
Private Practice, St. Clair Shores, Michigan, USA

This program is designed as an interactive presentation about Laser Safety facts, rules, infractions, even trivia. The presentation is in the form of the game show Jeopardy!, in which contestant teams will be selected from the audience to test their knowledge of Laser Safety. This is designed to be a fun, entertaining, yet informative opportunity to refresh and review issues involving the safe use of lasers in dentistry.

Educational Objective
1. Summarize critical issues related to laser safety as it pertains to the dental practice.

Saturday 3:00 p.m. – 4:00 p.m., Room 111

Advanced Proficiency Review and Discussion

Mel Burchman, DDS¹, Charles R. Hoopingarner, DDS², Edward Kusek, DDS³, Angie Mott, RDH⁴
¹Private Practice, Langhorne, Pennsylvania, USA; ²Private Practice, Houston, Texas, USA; ³Sioux Falls, South Dakota, USA; ⁴Tulsa, Oklahoma, USA

This course is designed to assist individuals who are on the pathway to or are presently considering achieving the Academy of Laser Dentistry’s (ALD’s) Advanced Proficiency Certification. This level of certification requires an extensive amount of knowledge on laser safety, physics, and clinical case management. This loosely structured, interactive review session is designed to expand on the ALD Advanced Proficiency Online Review Course and give the attendees the opportunity to address any questions or concerns they have on any topics as related to laser treatment and utilization. Some of the topics to be discussed in-depth include laser wavelengths and light absorption, temporal emission modes, power density, and the combined effects these parameters have on the interaction of light energy on biological structures. Laser safety considerations and the role of the Laser Safety Officer (LSO) will also be discussed.

Educational Objectives
1. Acquire a more in-depth understanding of laser physics as it relates to patient care.
2. Gain a more comprehensive knowledge on how light energy interacts with biological structures.
3. Obtain a thorough understanding of laser safety and the role of the Laser Safety Officer.
4. Become better prepared for the ALD’s Advanced Proficiency Certification Examinations.
The fundamentals of dental laser surgery were originally developed in the 1980 in the United States, Europe, and Japan. The author will share his experience and activities during this time. Next, the modern scientific background of soft tissue laser surgery will be presented. The role of laser wavelength, power, pulse length, and tip geometry will be reviewed. The future of diode laser development for dental surgery will be discussed. Tip temperature in contact surgery mode has been found to be a dominant factor in soft tissue cutting and coagulation. Real-time control of tip temperature allows for a significant increase in safety margin, minimizing risk of collateral thermal damage and scarring, and improving speed and precision of cutting. Control of tip temperature is made possible by a special tip initiation procedure and a newly developed Automatic Power Control (APC) technology. The Thermo-Optically Powered (TOP) tip has a tissue cutting and coagulation effect due to thermal conduction and laser-induced thermal radiation with an effective coefficient of tissue absorption close to that of a CO2 laser. TOP surgery clinical examples, including gingival troughing, gingivoplasty, frenectomy, and second-stage implant recovery, will also be presented.

Educational Objectives
1. Summarize the modern scientific background of soft tissue laser surgery.
2. Review the role of laser wavelength, power, pulse length, and tip geometry.

Educational Objectives
1. Gain an understanding that not all lasers are “created equal.” Some laser wavelengths are more effective at accomplishing specific procedures than others. This is dependent upon target chromophores.
2. Understand what chromophores are and which specific chromophores are absorbed by which specific laser wavelengths.
3. Understand new and novel laser treatment techniques to repair or regenerate bone and increase the width of keratinized periodontal tissue, eliminating the need for soft or hard tissue grafts taken from a donor site.
4. Learn how to identify cases that are best treated only by laser phototherapy and techniques, or in a combination of traditional and laser treatment.

Dentists and their auxiliaries should consider which chromophore will be absorbed by each device before attempting any laser procedure. Understanding what chromophores are and which specific laser wavelengths affect which specific chromophores will help clinicians make better decisions in purchasing lasers and deciding which laser to use for a desired effect. Because of the different chromophore-specific absorption properties of different wavelengths, clinicians need to know that there is no such thing as an “all-inclusive laser” that will effectively and safely accomplish every dental procedure.

Educational Objectives
1. Determine the ideal laser wavelength for providing the optimum and most predictable outcome available for periodontal cases when using various laser devices.
2. State the energy parameters and optimum settings based on tissue characteristics and phenotype.
3. Understand new and novel laser treatment techniques to repair or regenerate bone and increase the width of keratinized periodontal tissue, eliminating the need for soft or hard tissue grafts taken from a donor site.
4. Learn how to identify cases that are best treated only by laser phototherapy and techniques, or in a combination of traditional and laser treatment.

Laser technology provides many novel periodontal procedures that can only be delivered utilizing a laser handpiece in a precise manner, eliminating invasive conventional surgical methods. Using the proper laser wavelengths with trained and experienced hands can provide the optimum desired tissue result and enhance patient oral health.

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Periodontal treatment can be enhanced by a combination of traditional and laser technology techniques in order to restore and improve the oral health of patients affected by oral infection and disease.

This lecture will cover basic laser therapy and innovations in everyday periodontal practice utilizing diode, Nd:YAG, Er:YAG, Er,Cr:YSGG, and CO2 lasers. Emphasis will be on treatment planning and best choice of laser wavelength for clinical applications to achieve excellent therapeutic and esthetic outcomes.

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Lasers have finally entered the dental marketplace as a real and useful dental instrument and, when used properly, offer the clinician a wonderful and superior alternative replacement for the scalpel. When used clinically, lasers offer the following advantages: A relatively bloodless operative and postoperative course, coagulation, vaporization or cutting, a relatively sterile operating field, minimal swelling and scarring, usually no suturing, decreased operative time, reduced-to-absent postoperative pain, and high patient acceptance.

A plethora of clinical procedures will be shown and histopathologic wound healing will be discussed as it compares to other surgical modalities. Current controversies and the future of dental lasers will also be reviewed.

Educational Objective
1. Relate when and why CO2 lasers are used in soft tissue dental surgery.

Method
Periodontal pocket depths and bleeding sites were recorded at pretreatment, 12 weeks post-treatment, and at 12-week maintenance appointments. Paper points were used to gain microorganisms from eight pockets. On the initial treatment and 12-week appointments, samples were taken prior to instrumentation, following conventional definitive instrumentation, and following lasing using sulcular debridement protocols. Six weeks after initial treatment, samples were taken prior to instrumentation. No lasing occurred at the 6-week appointment. Each time the samples were taken, they were processed immediately. The samples were cultured in both aerobic and anaerobic conditions for 2 weeks, then counted.

Results
The patient’s clinical indices of bleeding on probing and pocket depths were reduced significantly. The study also showed reduction in CFUs from pre-instrumentation to post-lasing. Immediately after lasing, the CO2-lased samples showed a greater reduction of CFUs than the 980-nm diode. At 6 weeks, the pockets that had been lased with the CO2 laser showed fewer CFUs than the diode laser-treated sites. Samples were taken again at 12 weeks post-lase treatment; again, the sites newly treated with the CO2 laser were reduced more significantly than those treated with the diode laser.

Conclusions
Laser-assisted, nonsurgical periodontal therapy was effective in improving the patient’s periodontal health according to reduction of bleeding on probing and reduced numbers of pockets and depth of pockets. Both the 980-nm diode and the 10,600-nm CO2 lasers reduce CFUs. This study suggests the 10,600-nm CO2 laser wavelength reduces CFUs more effectively than the 980-nm diode laser wavelength. Due to the small sample size of the study, further research is needed.

Educational Objectives
2. Contrast microbiological findings of pretreatment, post-treatment, 6 weeks post-treatment, and 12 weeks post-treatment.
3. Assess clinical indices of bleeding on probing and compare them from pretreatment to post-treatment to 3 years post-treatment.
4. Evaluate colony forming units within selected pocket spaces pretreatment, post-instrumentation/prelasing, and post-lasing.

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The diode laser was added to the erbium laser regimen because the 810-nm diode wavelength is easily absorbed by melanin and hemoglobin and other chromophores present in periodontally diseased tissues and pathogens. When this case was started in 2004, published literature on bacterial reduction was focused on diode and Nd:YAG lasers. Current published studies support the erbium laser’s ability to reduce bacteria. Literature supports that erbium lasers can provide a more suitable environment for cell adhesion favorable to the attachment of the periodontal ligament (PDL).

Method
The Nd:YAG laser case was treated using 12 appointments at 7 to 10-day intervals; the fiber’s working length was shortened by 1 mm at each appointment. The Er,Cr:YSGG / diode combination case was treated with 5 appointments at weekly intervals. The erbium laser’s Z6 – 9-mm tip was utilized for the removal of diseased tissue approximately 1 millimeter less than pocket depth. Laser operating parameters: 0.25-0.75 Watt; 15-20% air; 10-15% water; exposure duration 5-10 seconds per site. Scaling and root planing was then performed. Final treatment used a pulsed diode laser set at 1 Watt average power for bacterial reduction.

Results
Both Nd:YAG laser and the combination erbium and diode laser showed good results, although the combination case achieved faster tissue healing. The root surface appeared similar to a non-erbium laser treated site. Both cases presented with no complications.

Conclusions
In this case, the combined treatment using Er,Cr:YSGG and diode lasers seemed advantageous over the Nd:YAG laser due to more efficient healing. This presentation discusses off-label use of a device that has not received U.S. FDA marketing clearance for the specified clinical indication.

Educational Objectives
1. Compare the healing results of the Nd:YAG laser to the erbium-diode laser combination case at 1-week and 3-month postoperative treatments.
2. Explain that an erbium-diode combination wavelength is safe and effective for hygiene therapy.
Pocket Elimination, Arrangement of Adequate Gingival Form and Restoration, and Furcation Treatment Without Traditional Surgery Using an Er,Cr:YSGG Laser

Hisamori Hayashihara, DDS, PhD
Clinical Practice, Hiroshima, Japan

The number of periodontal patients visiting dental offices is very small, even though periodontal disease is an essential factor for some medical diseases. Perhaps the reason is that most patients have experienced uncomfortable and painful periodontal treatment in the past. Moreover, they tend to abandon post-treatment care if this disease is able to be healed without an uncomfortable or fearful feeling different from conventional surgery; many patients would likely visit the dental office for treatment. The presenter has treated moderate and severe periodontal disease with an Er,Cr:YSGG laser for surgery-fearful patients for many years.

Method
After examination and initial preparation, gingiva was lased with an Er,Cr:YSGG (2,780 nm) laser at 0.5-0.75 Watt, 8% water, 11% air, 20 Hz, H-mode with MZ5 (diameter 500 μm, 14 mm in length) tip for pocket elimination. Infected inner epithelium of the periodontal pocket was then removed with the laser set at 0.5 Watt, 10% water, 11% air, 25 Hz, S-mode with MZ5 Radial Firing Perio Tip.

Results
The presenter has succeeded in keeping many severe periodontal infected teeth. Particularly, severe periodontitis cases involving furcation lesions were successful. Controlling propagation of anaerobic bacteria to eliminate pocket depth is very important for healing ability during treatment. Another important factor is to keep an initial epithelial attachment to the tooth at the ablated gingival line to facilitate a final, firm epithelial attachment.

Educational Objectives
1. Indicate how comfortable treatment can be for patients with moderate and severe periodontal disease by using an Er,Cr:YSGG laser.
2. Specify how pocket elimination and adequate gingival forming are very important for maintenance and enhance human-healing capability.
3. Appreciate how periodontal treatment is very important for total health.
Modified Fiber-Optic Designs and Their Relevance in Laser Endodontics

Roy George, BDS, MDS, PhD, Laurence Walsh, BDSc, PhD, DDS
1Griffith University, Queensland, Australia, 2The University of Queensland, Queensland, Australia

Overall Objective
The efficacy of lasers in endodontics depends to a large extent on the ability to deliver laser energy effectively on the walls of the root canal. This will allow for effective preparation, smear layer removal, and disinfection of the root canal. Modification of tip design could help in more effective distribution of laser energy on the walls of the root canal. Shock waves produced by laterally emitting tips in a fluid-filled canal may enhance smear layer removal. Laterally emitting tips may also be useful in diagnosis of pathogen.

Method
Laterally emitting fiber-optic design was made using a combination of well-controlled etching and abrasion techniques. A diode laser (980 nm) was used to study the emission patterns in teeth coated with thermochromic dye. The tips studied included plain-ended (forward-emitting) laser fibers; conical laser fibers; side-firing, honeycomb-pattern fibers; and honeycomb fibers with safe ends. Also the modified designs in assisting root canal procedures and their possible limitations were studied using an Er,Cr:YSGG laser on extracted teeth.

Results
The patented honeycomb design showed the best lateral emission among all groups, with conical tip-generated shock waves allowing for the best removal of smear layer when used with an erbium laser. However, all forward-firing tips showed a risk of extrusion of fluid past the anatomical apex of the tooth.

Conclusion
Fiber designs that help increase lateral emission may play an important role in the use of laser technology in endodontics and possibly other fields in dentistry.

Educational Objective
1. Explain that the efficacy of lasers in endodontics depends to a large extent on the ability to deliver laser energy on the walls of the root canal.

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Conclusion
The use of NaOCl, EDTA, and Er:YAG laser energy together have a synergistic effect, increasing treatment efficacy and leading to significantly better debriding and decontaminating the root canal.

Educational Objectives
1. Review evidence-based data on laser-assisted endodontics.
2. Assess effectiveness of the erbium laser-activated irrigation technique by showing data and images of the three-dimensional movement of the irrigant to the entire space within the canal.
3. Assess the minimally invasive aspect of this technique by understanding that cycling irrigants through the entire canal system reduces the need for greater instrumentation.
4. Consider the safety and ease of the PIPS technique by explaining its position in the coronal chamber and the lower and adjustable power used.

Endo 1.4 Lasers in Endodontics
Thursday 11:45 a.m. – 12:00 p.m., Room 111

No Pain, No Drugs, No Stress with Photon-Induced Photoacoustic Streaming (PIPS) – Calcium Hydroxide – Subsonic Irrigation Technique (SIT)

Dr. Felice Marmoro, Dr. Caterina Faccin, Dr. Giuseppe Bray
1 Private Practice, Valdagno (Vicenza), Italy; 2 Private Practice, Verona, Italy; 3 Private Practice, Corigliano d’Otranto, Italy

Photon-Induced Photoacoustic Streaming (PIPS) – Subsonic Irrigation Technique (SIT) are new methods involving the use of the erbium laser, and its interaction with the irrigating solutions (saline, ethylenediaminetetraacetic acid (EDTA), sodium hypochlorite). The photoacoustic and photomechanical phenomena are minimally invasive with the use of 50-microsecond energy pulses. The “PIPS-Calcium Hydroxide-SIT” method pushes the endodontic irrigants into the canal system with such a speed and force that a vortex similar to a tsunami is generated. This vortex overwhelms, disrupts, and alters the organic substances (including microorganisms) in the endodontic space without altering the structure of the inorganic substance that the scanning electron microscope reveals to be completely cleaned and free of smear layer. Cleaning and decontamination is primarily due to the physical action of the vortex rather than the chemical action of sodium hypochlorite and EDTA and/or citric acid. The swirling irrigants, however, do not limit their action to the endodontium; they also invade the periapical area and side periodontium by generating a chemical and physical trauma.

With this method the authors have treated 140 teeth: 40% viable, 15% necrotic, 45% retreatment. In all cases the typical postoperative symptoms are absent or so slight as not to require any drug treatment.

Educational Objective
1. Discuss how the Er:YAG laser-assisted “PIPS-Calcium Hydroxide-SIT” method is used to help ensure the endodontic patient receives a high level of predictability with the least postoperative discomfort.

Endo 1.5 Lasers in Endodontics
Thursday 12:00 p.m. – 12:15 p.m., Room 111

Using LLLT and Nd:YAG Lasers to Enable Root Canal Therapy and Hemisection Procedures on a Medically Compromised Stroke Patient with Bell’s Palsy

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

In this case presentation low-level laser therapy (LLLT) and an Nd:YAG laser were utilized in root canal therapy and root hemisection in a medically compromised patient. A patient with Bell’s Palsy presented with swelling and infection on tooth #30. A preoperative radiograph indicated a fracture of the floor of the tooth between the distal and mesial roots. The patient recently suffered a stroke, was taking Coumadin™ and a low-dose aspirin, and had to remain on medication. Treatment options discussed included extraction and implant, or root canal therapy (RCT), hemisection, and 2-unit bridge (spanning #29 to #30). Due to recent health concerns, the patient did not want to go through the extraction and implant procedures, and elected the root canal, hemisection, and bridge treatment plan. This presentation will show the technique that was used for RCT, laser-assisted hemostasis, and biostimulation.

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.

Educational Objective
1. Specify how the use of lasers can enable treatment of medically compromised patients in the dental office and minimize hospitalizations and additional expenses.

BE SURE NOT TO MISS!
Thursday Lunch N Learn
12:00 p.m. – 1:30 p.m.

The Academy is pleased to offer its Lunch and Learn Series at ALD 2012 – a unique opportunity to interact one-on-one with conference speakers and laser experts in an informal setting. To maximize your time with table hosts, each table will be limited to 8 participants. Reservations will be accepted on a first-come, first-served basis at the registration desk. Your ticket will be available at the Registration Desk. If you do not pre-register, you may sign up at the Registration Desk for any table that still has seats open. There is no additional charge.
Academy of Laser Dentistry

HARD TISSUE TRACK

HT 2.1 Minimally Invasive Dentistry – Invited Speaker
Friday 8:00 a.m. – 9:00 a.m., Rooms 109-110

Minimally Invasive Dentistry: What Does the Future Look Like?
V. Kim Kutsch, DMD
Private Practice, Albany, Oregon, USA

This keynote address will focus on Minimally Invasive Dentistry (MID), with its beginnings in the use of lasers in dentistry through development of current concepts. The discussion will include respect for healthy tissue in the design of restorative treatments and strategies. The presentation will conclude with a look at the future of MID, the trend for risk assessment-based diagnosis, and the role of the Motivational Interview and Wellness Coaching in minimally invasive-based care.

Educational Objectives
1. Define the term Minimally Invasive Dentistry.
2. Consider the role that the Minimally Invasive Dentistry philosophy plays in diagnosis and treatment planning.
3. Appreciate the roles of risk assessment-based care, Motivational Interview, and Wellness Coaching will play in future Minimally Invasive Dentistry strategies.

HT 1.2 Minimally Invasive Dentistry – Hard Tissue Applications
Friday 11:10 a.m. – 12:00 p.m., Room 110

The Influence of Er:YAG Laser Irradiation on Bone Healing: Science and Clinical Applications
Gabi Kesler, DMD¹, Dr. Dana Kesler-Shviro²
¹The Maurice and Gabriela Goldschleger School of Dentistry, Tel Aviv, Israel; ²Hadassah Dental School of Medicine, Jerusalem, Israel

There have been many studies attempting to explain the possible mechanisms of the excellent healing of bone after Er:YAG laser bone irradiation. This lecture will clarify and show these mechanisms based on scientific and clinical data.

Educational Objectives
1. Recount the mechanisms of bone healing to achieve a better clinical knowledge of how to treat patients.
2. Explain how laser use with the correct parameters will result in better and faster osseointegration.
3. Describe how to maximize results while treating bone.
4. Report the advantages of bone procedures with the Er:YAG laser compared to conventional methods, with an understanding of the scientific background.

HT 1.3 Minimally Invasive Dentistry – Hard Tissue Applications
Friday 1:00 p.m. – 1:30 p.m., Room 110

Why Do Some Lasers Become Plant Holders and Coat Racks?
Lawrence Kotlow, DDS
Private Practice, Albany, New York, USA

The erbium laser operating at 2940 nm or 2780 nm is often placed in a corner and not used after a dentist has invested in this dual hard and soft tissue laser. This discussion will address why some lasers become plant holders and coat racks: dentists often lack understanding of laser physics and the specifics of his or her own laser. This discussion will discuss many of the problems dentists incur and how they may be prevented by properly using the erbium laser. The laser discussed in this seminar is the Fotona Er:YAG laser distributed in the United States by Lares and sold under the name of the PowerLase AT Spa and the LightWalker laser by Technology4Medicine.

Educational Objectives
1. Better understand how to use the erbium laser.
2. Discuss ways to prevent patients from feeling discomfort during laser treatment.
3. Achieve the level confidence necessary to prevent investing in a laser and then never using it.
4. Dispel myths that are repeated by dentists who fail to understand and use the lasers correctly.

BE SURE NOT TO MISS!

Student Scholarship Presentation
Friday 9:00 a.m. – 9:30 a.m.
Room 110
Ms. Jeema Dad, University of Texas Health Science Center at Houston

General Membership Meeting
Friday 9:30 a.m. – 10:00 a.m.
Room 110

President’s Awards Ceremony
Friday 7:00 p.m. – 8:00 p.m.
Join us as we recognize distinguished members. No additional fees apply.

President’s Awards Banquet
Friday 8:00 p.m. – 11:00 p.m.
Friday’s Awards Banquet promises to be memorable. Separate fees apply.
Are You Operating at Peak Performance?

Peter Pang, DDS
Private Practice, Sonoma, California, USA

A general dental practice typically offers a wide range of procedures and materials. In the current market of available dental laser wavelengths, the erbium group offers a high level of versatility. Several procedures can be improved by utilizing laser technology. But does the science support this? Specifically, the 2940-nm Er:YAG laser in hard tissue (Lightwalker (Fotona), Tech4Med) will be highlighted, along with the significance of using high peak energies. Simple-to-understand explanations comparing and contrasting the guideline of using the lowest power possible but high peak energy will be discussed. Clinical cases covering a wide range of procedures – salvaging failing implants, osseous periodontal surgery, orthodontics, and restorative dentistry – will be presented. Techniques will be discussed, including guidelines from the scientific literature to avoid possible complications.

Educational Objectives
1. Indicate how the Er:YAG laser can be used in surgical cases involving peri-implantitis and moderate-to-advanced periodontal situations.
2. Indicate how scientific research supports the use of the Er:YAG laser in surgical cases.
3. Specify how peak power can facilitate operation at peak performance in restorative and endodontic dentistry.
4. Indicate how peak power relates to the commonly heard guideline, "Always use the lowest power possible to accomplish the treatment goals."

You Think You Have Too Many Lasers? Think Again!

A. Rick Cardoza, DDS
Private Practice, El Cajon, California, USA

New laser technology is taking laser dentistry to a new level and literally changing dentistry. Yes, you may need another laser! New procedures and superior results can be achieved with new lasing mediums, delivery systems, pulse shapes, overall control, and breakthrough techniques. Laser effects and technologies including SuperHydroCavitation (SHC)™ and photohydroacoustic super cavitation technology (PHAST)™ will be described. The presentation will also discuss Photo-Induced Photoacoustic Streaming (PIPS) which is revolutionizing endodontics as well as new periodontal applications which capitalize on photohydroacoustics.

Educational Objectives
1. Learn about Photohydroacoustics, SuperHydroCavitation, and hard tissue applications using photohydroacoustic super cavitation technology (PHAST).
2. Understand soft tissue and endodontic applications using PHAST.
3. Consider implementing these new Er:YAG laser procedures and understand the technical advancement behind the new techniques and procedures for improved patient care.
4. Relate the potential impact of these methodologies on practice production and return on investment (ROI).
IMPLANTOLOGY TRACK

Imp 1.1 Lasers in Implantology
Friday 10:30 a.m. – 11:30 a.m., Room 109
Lasers in Implant Dentistry
Sebastiano Andreana, DDS, MS
University of Buffalo School of Dentistry, Buffalo, New York, USA

The presentation will focus on a review of lasers in implant dentistry. Different applications involving different laser wavelengths will be presented based on literature, clinical experience, and basic science studies. Lasers have been used in implant dentistry particularly to decontaminate (disinfect) implant surfaces, to support implant site preparation, and to stimulate bone and soft tissue healing. CO2, diode, Er:YAG, and Er,Cr:YSGG lasers will be included in this presentation.

Educational Objectives
1. Recount the indications for laser use in implantology.
2. Define the limitations of different laser wavelengths in implant dentistry.
3. Recognize the value of laser use in implantology.

Imp 1.2 Lasers in Implantology
Friday 11:30 a.m. – 12:00 p.m., Room 109
A Team Approach to Treating Peri-Implantitis
Jeanette Miranda, RDH, BS
Family and Implant Dentistry, Sioux Falls, South Dakota, USA

The objective of this presentation is to address the treatment of peri-implantitis as a team. Both the dentist and hygienist can contribute to the patient’s therapy with a combination of treatments and lasers. A flow chart will explain the different steps, lasers, and clinicians used to treat peri-implantitis. A variety of case studies will be discussed to demonstrate the recommended protocols.

Educational Objectives
1. State symptoms and characteristics of peri-implantitis.
2. Explain a peri-implantitis treatment flow chart.
3. Summarize techniques for treating peri-implantitis.
4. Describe case studies involving laser-assisted treatment of peri-implantitis.

HYGIENE TRACK

Hyg 1.1 Hygiene Extravaganza
Friday 8:00 a.m. – 9:00 a.m., Room 107
Introduction to Soft Tissue Lasers
Chris Owens, DDS
Advanced Laser Training, Laguna Hills, California, USA

This presentation will serve as a comprehensive introduction to soft tissue lasers geared toward dental hygienists. Topics will include laser physics, safety, and tissue interaction, as well as techniques for success with soft tissue surgery and laser periodontal therapy. Commonly used insurance codes and a discussion of workflows will also be presented. Attendees will learn through hands-on slide and video presentations and will perform hands-on exercises later in the morning. By the end of the day, participants will be ready to return to their offices and with confidence institute the most common soft tissue laser procedures and laser-assisted periodontal therapies.

Educational Objectives
1. Review fundamentals of soft tissue laser dentistry and determine whether or not lasers are something that should be added to the hygiene department.
2. Specify laser indications for use and applications in the practice of dental hygiene. Compare lasers to traditional methods.
3. Describe how to use a laser safely, emphasizing eye protection and scientific principles of laser physics as well as regulatory requirements specific to lasers in dental offices.

Hyg 1.2 Hygiene Extravaganza
Friday 9:00 a.m. – 10:00 a.m., Room 107
The Basics of Utilizing Lasers within Scaling and Root Planing Procedures
Gloria Monzon, RDH
Milpitas, California, USA

Success using lasers in dental hygiene requires a complete foundation of knowledge including laser physics, basic science, safety, and utilization skills. Through case studies and video examples, this presentation will provide a step-by-step description of how a laser can be used during a typical root planing appointment. It will be especially helpful for the new laser clinician.

Topics to be discussed are:
- Soft tissue management with a laser
- Target tissue
- Laser bacterial reduction
- Laser removal of diseased epithelium
- Safe operating parameters
- Laser techniques
- Postoperative care.

Educational Objectives
1. Identify the laser target tissue in scaling and root planing procedures.
2. Provide safe laser operating parameters.
3. Understand the basic sequence of integrating a laser into the hygiene department.
4. Specify basics of laser use to enhance patient comfort.
Understanding the Science of Low-Level Lasers: The Key to Success

Gerry Ross, DDS
Private Practice, Tottenham, Ontario, Canada

Photobiomodulation has been shown in both research and clinical studies to improve wound healing, decrease postoperative pain, provide dental analgesia, improve nerve regeneration, aid in treating myopathic pain, improve lymphatic flow leading to a reduction of edema, and improve circulation. However, many clinicians do not understand the primary and secondary mechanisms that lead to the clinical effects and are forced to follow the cookbook approach. This presentation will review the primary mechanisms of low-level laser therapy (LLLT), including the role of Reactive Oxygen Species (ROS), nitric oxide, adenosine triphosphate (ATP), and changes in cell membrane permeability—all of these occurring within the mitochondria.

These primary mechanisms help to normalize cell function and morphology, and also lead to a number of secondary effects which will be discussed in detail. Further understanding how the laser can cause either stimulation or inhibition, depending on the energy delivered, will allow practitioners to use any low-level device effectively, regardless of the device. A review of various cases will help practitioners understand how to determine the appropriate dose to give in order to achieve the desired clinical result.

Research will be presented to show that the user of photobiomodulation is making clinical decisions on an evidence-based basis.

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.

Educational Objectives
1. Summarize the underlying mechanisms that create the clinical effects of photobiomodulation.
2. Indicate how to determine dosage in order to make appropriate clinical decisions rather than follow a cookbook.

Improving Your Hands-On Skills, Always Getting Better! Hands-On Hygiene Workshop

Angie Mott, RDH1, Mary Lynn Smith, RDH, BM2, Gloria Monzon, RDH3
1Private Practice, Tulsa, Oklahoma, USA; 2Private Practice, McPherson, Kansas, USA; 3Private Practice, Milpitas, California, USA

This hands-on workshop will allow hygienists the opportunity to try different soft-tissue lasers, spend time working on techniques, and be able to get answers to their questions from other experienced laser hygienists.

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

Periodontal Therapy Comparing the Nd:YAG (1064 nm) Laser to a Combination Therapy of Er,Cr:YSGG (2780 nm) and Diode (810 nm) Lasers

Gloria Monzon, RDH
Milpitas, California, USA

This study compares the active phase periodontal therapy using an Nd:YAG (1064 nm) laser with a combination therapy of Er,Cr:YSGG (2780 nm) and diode (810 nm) lasers. The same patient was treated in both cases, first in 1992 with the Nd:YAG laser by Teri Gutierrez, RDH, then by this presenter in 2004 with the combination of erbium and diode lasers. Acknowledgement is made to Teri for her work and to Dr. Robert Barr for his guidance.

Pretreatment periodontal exam findings both in 1992 and 2004 presented similar advanced periodontal disease, 4-12 mm pockets, generalized chronic inflammation, mobility, radiographic bone loss, and recession. Treatment options excluded surgical intervention. Both times, lasers were used in combination with traditional scaling and root planing.

Use of the Nd:YAG laser in periodontal therapy is widely accepted as appropriate for the dental hygiene team. Erbium lasers are easily absorbed by hydroxyapatite and water. Therefore, concerns regarding possible inadvertent absorption by nontarget hard tissue have discouraged erbium laser use for hygiene periodontal treatment.

The diode laser was added to the erbium laser regimen because the 810-nm diode wavelength is easily absorbed by melanin and hemoglobin and other chromophores present in periodontally diseased tissues and pathogens. When this case was started in 2004, published literature on bacterial reduction was focused on diode and Nd:YAG lasers. Current published studies support the erbium laser’s ability to reduce bacteria. Literature supports that erbium lasers can provide a more suitable environment for cell adhesion favorable to the attachment of the periodontal ligament (PDL).
Method
The Nd:YAG laser case was treated using 12 appointments at 7 to 10-day intervals; the fiber's working length was shortened by 1 mm at each appointment. The Er,Cr:YSGG / diode combination case was treated with 5 appointments at weekly intervals. The erbium laser's 26 – 9-mm tip was utilized for the removal of diseased tissue approximately 1 millimeter less than pocket depth. Laser operating parameters: 0.25-0.75 Watt; 15-20% air; 10-15% water; exposure duration 5-10 seconds per site. Scaling and root planing was then performed. Final treatment used a pulsed diode laser set at 1 Watt average power for bacterial reduction.

Results
Both Nd:YAG laser and the combination erbium and diode laser showed good results, although the combination case achieved faster tissue healing. The root surface appeared similar to a non-erbium laser treated site. Both cases presented with no complications.

Conclusions
In this case, the combined treatment using Er,Cr:YSGG and diode lasers seemed advantageous over the Nd:YAG laser due to more efficient healing.

This presentation discusses off-label use of a device that has not received U.S. FDA marketing clearance for the specified clinical indication.

Educational Objectives
1. Compare the healing results of the Nd:YAG laser to the erbium-diode laser combination case at 1-week and 3-month postoperative treatments.
2. Understand that an erbium-diode combination wavelength is safe and effective for hygiene therapy.

Hyg 1.6 Hygiene Extravaganza
Friday 1:30 p.m. – 2:00 p.m., Room 109

Retrospect and Introspect: What Difference Has Laser-Assisted Nonsurgical Therapy Made?

Mary Lynn Smith, RDH, BM
McPherson, Kansas, USA

Many case reports show periodontal disease is successfully treated with laser-assisted nonsurgical techniques. Even more than considering each case individually, it is valuable to analyze the trends of laser-assisted therapy over a period of time in multiple cases. This retrospective study evaluates the results of clinical indices in nonsurgical periodontal laser therapy spanning from the 2000s to today.

Overall Objectives
Overall objectives of this study included: analyzing the clinical indices bleeding on probing and pocket depths, over an extended period of time in a large sample within one practice, and comparing a case which completed active phase therapy but did not continue with supportive therapy.

Method
Periodontal evaluation, using a Marquis probe, was documented at pretreatment, 8 to 12 weeks post-treatment, and at supportive maintenance appointments. Improvement is illustrated by showing percentages of bleeding sites, periodontal sites and teeth no longer exhibiting bleeding on probing, or pocket depths greater than 3 mm.

Results
The general trend of patients treated with laser-assisted periodontal therapy experienced reduction in the clinical indices of bleeding on probing and pocket depths.

Conclusion
Patients treated with laser-assisted periodontal therapy experienced improved periodontal health. When a patient does not continue with supportive periodontal therapy of any kind, reinfection occurs and deterioration ensues.

Educational Objectives
1. Discuss the percentage of resolution in a large sample of patients within a practice over several years.
2. Contrast one patient’s clinical indices from pretreatment through 5 months with laser-assisted supportive periodontal therapy to current indices after 4 years to treatment without supportive treatment.

Hyg 1.7 Hygiene Extravaganza
Friday 2:00 p.m. – 3:00 p.m., Room 109

The Hygiene Forum – Panel Discussion Session

Angie Mott, RDH
Tulsa, Oklahoma, USA

The Hygiene Forum will bring together a panel of hygiene experts who will be available for a Question-and-Answer session on topics that the audience would like to discuss. This session will cover the rationale for laser therapy, laser appointment protocol, settings for using various laser devices, treatment expectations, and State Regulatory issues regarding lasers.

Educational Objective
1. Receive answers to questions about laser-assisted periodontal therapy in a collegial and informative learning environment.

Hyg 1.8 Hygiene Extravaganza
Friday 3:00 p.m. – 4:00 p.m., Room 107

What Do I Need to Know for My Advanced Clinical Case Study for Dental Hygienists?

Angie Mott, RDH
Tulsa, Oklahoma, USA

This presentation will show an example of how to create an advanced clinical case study for a dental hygienist, following the curriculum guidelines established by the Academy of Laser Dentistry. This presentation is intended for hygienists and doctors who want to know how to create a clinical case study using a soft-tissue laser for phase one periodontal therapy for their Advanced Proficiency examinations.

Educational Objective
1. Relate the characteristics of an advanced clinical case study that is appropriate for individuals preparing their Advanced Proficiency examinations.
Pedro 1 Lasers in Pediatric Dentistry and Orthodontics
Friday 8:00 a.m. – 9:20 a.m., Room 111
**Laser Dentistry: The History, Science, and Safety**
Fred Margolis, DDS
Private Practice, Highland Park, Illinois, USA

This presentation will highlight the history and science of laser dentistry, and laser safety concerns. The historical background will give the participants a glimpse of who were the pioneers in laser dentistry, the types of lasers they invented, and which lasers are currently in use today. The science of laser dentistry will include the various wavelengths that are used for hard and soft tissue laser dentistry, and the advantages and disadvantages of each wavelength that is currently used. The presentation will include the mechanisms and features of surgical (hard- and soft-tissue) and nonsurgical lasers and their clinical applications. Safety features of various lasers will be discussed and illustrated. The discussion will include the appropriate regulatory agencies involved in laser safety.

**Educational Objective**
1. Summarize highlights of the history of laser dentistry, the science of laser dentistry, and laser safety.

Pedro 2 Lasers in Pediatric Dentistry and Orthodontics
Friday 9:20 a.m. – 10:00 a.m., Room 111
**Soft Tissue Applications of Lasers in Pediatric and Orthodontic Applications**
Giovanni Olivi, MD, DDS¹, Louis Chmura, DDS, MS²
¹University of Genoa, Genoa, Italy; ²Marshall, Michigan, USA

This is an introduction to soft tissue lectures, both in pediatric dentistry and orthodontics, based in part on the Academy of Laser Dentistry’s Position Paper, “Laser Energy in Oral Soft Tissue Applications.”

Lasers have proven to be safe and effective for many soft tissue surgical procedures. The diode, Nd:YAG, erbium, and CO₂ lasers offer an alternative to the blade in the soft tissue therapies, introducing a new procedural approach, with high decontaminating (disinfecting) and hemostatic effects, improving healing and postoperative recovery, and above all decreasing fear and patient discomfort. A variety of clinical applications will be presented. An international bibliography of clinical laser procedures in oral pathologies, orthodontics, and mucogingival problems will be provided.

**Educational Objectives**
1. Enumerate the different choices among the different laser wavelengths used in dentistry.
2. Determine key references from the dental literature for laser utilization in oral pathologies, orthodontics, and mucogingival problems.

Pedro 3 Lasers in Pediatric Dentistry and Orthodontics
Friday 10:30 a.m. – 11:15 a.m., Room 111
**Using Lasers to Assist Mothers Experiencing Difficulties While Breastfeeding**
Lawrence Kotlow, DDS
Private Practice, Albany, New York, USA

This presentation will focus on the need to revise the lingual and maxillary lip ties in newborns and infants to allow mothers to more successfully breastfeed. The discussion will cover the history of nursing, myths, anecdotal vs. evidenced-based reasoning for treating these oral problems, and how to safely and quickly correct the soft tissue abnormalities using the 1064-nm Nd:YAG and 2940-nm Er:YAG lasers.

**Educational Objectives**
1. Explain how and why the lingual frenum and maxillary frenum may contribute to breastfeeding problems.
2. Learn how lasers can be used in newborns with a high degree of safety.
3. Encourage more dentists to diagnose and treat infants with breastfeeding problems.

Pedro 4 Lasers in Pediatric Dentistry and Orthodontics
Friday 11:15 a.m. – 11:30 a.m., Room 111
**Using Photobiomodulating Lasers in Children**
Lawrence Kotlow, DDS
Private Practice, Albany, New York, USA

This discussion will cover the use of low-level lasers and light-emitting diode instruments (e.g., the Q1000, MedX, 660-, 808-, and 830-nm wavelengths) in the treatment of trauma, gagging, orthodontic discomfort, analgesia, as well as other uses for the orthodontic and pediatric patient.

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.

**Educational Objectives**
1. Define and explain the term Photobiomodulation (PBM).
2. Provide examples of the use of PBM lasers in pediatric dentistry.
3. Provide examples of the use of PBM lasers in orthodontics.
4. Acquire the confidence to encourage dentists to look into the effects that PBM can provide for their patients.
Dental trauma in children is a frequent and often complex clinical event in which laser-assisted therapy can offer new treatment possibilities, improving the outcomes and reducing the associated complications.

In particular, it is worth considering that the use of laser-assisted therapies is associated with a marked reduction in the use of analgesics and anti-inflammatory medications compared to conventional procedures. Anesthesia vs. laser analgesia is another interesting and challenging area. Given the paucity of data on laser-assisted dental trauma therapy in the international literature and the absence of well-structured guidelines, this is an area ripe for scientific research. In this topic, laser technology, either complementing or replacing traditional methods with a simpler approach, offers a series of advantages throughout the therapeutic course.

Laser-assisted therapy is minimally invasive, being highly selective for carious or pulpal or gingival tissue. It has a high decontaminating (bactericidal) effect when compared to conventional procedures. It drastically reduces postoperative symptoms. The laser is also an option for nonvital bleaching, and can also be used in the correction of post-traumatic aesthetic defects. The laser is seen by the patient and parents as a magical instrument and for all these reasons it also improves patient compliance. Specifically, lasers can:

- provide a substitute for (1) the turbine, without contact and vibration, and with reduced pain perception; (2) the blade in the case of soft tissue applications related to periodontal trauma with improved coagulation and decontamination (disinfection) of the affected area
- complete some clinical procedures, such as decontaminating the area for a pulp capping, or decontaminating the root surface both within the canal in endodontics and onto the periodontal surface in cases of subluxations and bone trauma
- provide completely new treatments, for example to debond brackets after a post-trauma splinting of the anterior teeth and to provide biostimulation in post-trauma low-level laser therapy (LLLT) applications.

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.

**Educational Objective**

1. Describe how a laser can be used as an alternative or complementary instrument in dental traumatology and especially in pediatric dentistry.
Pediatric & Orthodontic Track

Pedo 7 Lasers in Pediatric Dentistry and Orthodontics

**Uses of a Soft Tissue Diode Laser in an Orthodontic Office**

Lou Chmura, DDS, MS¹, Stephen Tracey, DDS, MS²,
Courtney Gorman, DDS, MS³
¹Private Practice, Marshall, Michigan, USA; ²Private Practice, Upland, California, USA; ³Private Practice, Marion, Indiana, USA

This presentation describes the full range of issues relating to the use of a soft-tissue diode laser in an orthodontic office, including why a diode is ideal for orthodontic applications, some of the important factors in choosing which diode is best for one's practice, basic setup and fiber management, and a systematic way to approach laser procedures. Also discussed are the limiting factors in diagnosis (i.e., what to avoid to stay out of trouble) for soft tissue exposures, gingivectomies, including “smile design” principles for anterior esthetic recontouring and photobiostimulation. Throughout the presentation, proper communication and technique, along with medicolegal considerations, will be emphasized. At the conclusion, participants should feel confident in performing all soft tissue laser procedures normally handled in an orthodontic office.

Educational Objectives

1. Understand and implement a systematic approach to performing soft tissue laser procedures in an orthodontic practice.
2. Understand the limiting factors for successfully performing soft tissue laser procedures.
3. Observe and recount proper diagnosis, treatment planning, and technique for soft tissue laser procedures.

Pedo 8 Lasers in Pediatric Dentistry and Orthodontics

**Hard Tissue and Pulp Procedures**

Giovanni Olivi, MD, DDS
University of Genoa, Genoa, Italy

Lasers offer three main advantages in dental care: Erbium lasers can substitute for the conventional high-speed drill with equal or at times better results due to improved bactericidal qualities and the selective and precise removal of carious tissue. All laser wavelengths can complete the usual vital pulp procedures through disinfection, vaporization, and coagulation of the dental pulp. Diode lasers (from 635 to 1064 nm) offer new opportunities of treatment, for example, using low-level laser therapy for analgesic, biostimulating, and anti-inflammatory effects.

In pediatric dental care, all the recognized advantages of laser techniques play a decisive role in the successful day-to-day treatment of dental pathologies, thereby influencing and improving the positive acceptance of dental therapy.

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.

Educational Objective

1. Enumerate the advantages of laser technology in hard-tissue applications, emphasizing the role of laser energy for children in everyday dental care.

Pedo 9 Lasers in Pediatric Dentistry and Orthodontics

**Pulpotomies Using the 2940-nm Erbium Laser**

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

This presentation will cover the use of ErYAG lasers for the treatment and completion of pulpotomies in children, based on the more than 10 years of laser experience of a pediatric dentist. Results showing how laser treatment is equal to or better than chemical pulp treatments will also be discussed.

Educational Objective

1. Relate how the Er:YAG laser can be used for pulpotomy and soft tissue treatment in pediatric patients.

BE SURE NOT TO MISS!

Laser Jeopardy
Interactive Game

Saturday 2:00 p.m. – 3:00 p.m.

This program is designed as an interactive presentation about Laser Safety facts, rules, infractions, even trivia. The presentation is in the form of the game show Jeopardy, in which contestant teams will be selected from the audience to test their knowledge of Laser Safety.

This is designed to be a fun, entertaining, yet informative opportunity to refresh and review issues involving the safe use of lasers in dentistry.
Pedo 10 Lasers in Pediatric Dentistry and Orthodontics
Friday 3:30 p.m. – 5:00 p.m., Rooms 104-105

Pediatric Laser Hands-On Workshop

Fred Margolis, DDS¹, Lawrence Kotlow, DDS²
¹Private Practice, Highland Park, Illinois, USA; ²Private Practice, Albany, New York, USA

This hands-on program will enable the participant to use various laser instruments from several manufacturers to learn how to prepare hard tissue (cavity preparations) and perform soft tissue surgery. The instructors are Masters in Laser Dentistry (ALD) and have performed laser dentistry for more than 10 years. Using pigs’ jaws and extracted teeth, participants will learn the advantages of each laser and how to effectively and efficiently perform many techniques. This introduction will allow participants to decide which laser wavelength is right for one’s practice.

Educational Objective
1. Perform hard and soft tissue pediatric dentistry procedures on tissue models under controlled supervision.

Pedo 11 Lasers in Pediatric Dentistry and Orthodontics
Friday 3:30 p.m. – 5:00 p.m., Room 106

Orthodontics Laser Hands-On Workshop

Lou Chmura, DDS, MS¹, Stephen Tracey, DDS, MS², Courtney Gorman, DDS, MS³
¹Private Practice, Marshall, Michigan, USA; ²Private Practice, Upland, California, USA; ³Private Practice, Marion, Indiana, USA

This hands-on program will enable the participant to use various laser devices from several manufacturers to learn how to perform soft tissue surgery relevant to the orthodontic practice. Using pigs’ jaws, participants will learn the advantages of each laser and how to effectively and efficiently perform many techniques. This introduction will allow the participant to decide which laser wavelength is right for one’s practice and how to utilize the laser most efficiently in orthodontic applications.

Educational Objectives
1. For those new to lasers, perform soft tissue procedures on tissue models under controlled supervision, and determine which laser is appropriate for the practice.
2. For more experienced laser practitioners, work hands-on in a controlled laboratory environment to perfect technique and utilize diode lasers most efficiently.

LOW-LEVEL LASER TRACK

LLLT 0.1 Low-Level Lasers and Photobiomodulation
Thursday Lecture 1:30 p.m. – 2:00 p.m.; Workshop 2:00 p.m. – 2:45 p.m. Room 111

Everyday Use of Low-Level Laser Therapy for the Dental Patient

Larry Lytle, BS, DDS, PhD
Rapid City, South Dakota, USA

All light works to some extent. There are at least 26 ways dentists can use low-level lasers to make dental visits more comfortable and improve patient care and satisfaction. Quality of laser diodes, various wavelengths, combinations of wavelengths, power density, type of wave, frequency, penetration, and dose all affect results and patient satisfaction. One low-level laser will not do it all. Some dental conditions require low power - low dose resonating lasers while other conditions require higher power - higher dose stimulating lasers. As time permits, this presentation will discuss low-level laser therapy (LLLT) for the following conditions and dental uses.

• In place of anesthetic
• In place of topical anesthetic for painless injections
• Enhance anesthetic
• Before, during, and after preparations
• Before and after surgery
• Before, during, and after endodontics
• Hyperemic pulps
• Before gingival retraction techniques
• Seating crowns and bridges without anesthetic
• Temporomandibular Joint (TMJ) / Temporomandibular Disorder (TMD)
• Muscle relaxation for impressions
• Muscle relaxation during long dental procedures
• Tooth hypersensitivity
• Snoring – sleep apnea
• Headache
• Enhanced blood flow to the brain and dental structures
• Neck and shoulder pain
• Mucosal and tongue lesions
• Mucositis following chemotherapy
• Periodontal procedures
• Controlling sensitivity during prophylaxis
• Denture sores
• Herpes simplex
• Cracked lips from dental procedures
• Sinusitis
• Reduce nasal congestion to enhance dental procedures.

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.

Educational Objective
1. Increase knowledge concerning expanded use and efficacy of low-level lasers for dental patients.
Low-Level Laser Track

Understanding the Science of Low-Level Lasers: An Introduction to Today’s LLLT Track

Gerry Ross, DDS
Private Practice, Tottenham, Ontario, Canada

Photobiomodulation has been shown in both research and clinical studies to improve wound healing, decrease postoperative pain, provide dental analgesia, improve nerve regeneration, aid in treating myopathic pain, improve lymphatic flow leading to a reduction of edema, and improve circulation. However many clinicians do not understand the primary and secondary mechanisms that lead to the clinical effects and are forced to follow the cookbook approach. This presentation will review the primary mechanisms of low-level laser therapy (LLLT), including the role of Reactive Oxygen Species (ROS), Nitric Oxide, ATP and changes in cell membrane permeability—all of these occurring within the mitochondria.

These primary mechanisms help to normalize cell function and morphology, and also lead to a number of secondary effects which will be discussed in detail. Further, understanding how the laser can cause either stimulation or inhibition depending on the energy delivered will allow practitioners to use any low level device effectively, regardless of the device. A review of various cases will help practitioners understand how to determine the appropriate dose to give the desired clinical result.

Research will be presented to show the user is making clinical decisions on an evidence-based basis.

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.

Educational Objectives
1. Relate the mechanisms that create the clinical effects.
2. Recognize the dosage in order to make appropriate clinical decisions rather than follow a cookbook.

Mechanisms of Photobiomodulation Used in Dentistry

Praveen Arany, BDS, MDS, MMSc, PhD
Harvard University, Cambridge, Massachusetts, USA

Lasers have been widely used in many clinical applications in dentistry. High-powered lasers, use as a precise surgical tool, are increasingly popular, while low-power laser use in modulating inflammation, reducing pain, and promoting healing has also been well established in the literature. These low-power effects, termed Photobiomodulation (PBM), have been less widely adopted. A major deterrent has been the lack of understanding of their precise molecular mechanisms and, hence, the lack of a robust clinical dose.

This presentation will provide an overview of the currently known PBM mechanisms and then will outline a theoretical model to define the dosing for low-power laser clinical use. Further, clinical studies from a human clinical trial and animal experiments will be described demonstrating the use of low-power lasers in promoting oral mucosal healing and dental stem cell differentiation to dentin.

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.

References

Educational Objectives
1. Outline currently known mechanisms for the use of low-power lasers.
2. Discuss a model for outlining dosing specifications for safe and effective clinical use.
3. Specify specific clinical applications of low-power lasers in dentistry.

BE SURE NOT TO MISS!
Saturday 2013 Launch Party
20th Anniversary Kickoff Party – Ready, Set, Climb!
4:30 – 6:30 pm Poolside

Come as you are; casual, casual, casual. Everyone is Welcome. Wear your sneakers and get ready to Reach New Peaks with our Rock Climbing Wall. Support ALD’s Student Charity: What level can you reach? Intro, Standard, Advanced or Educator? How high can you climb? Native American music, dancers in full regalia, games, races and lots more. Enjoy a tequila or margarita bar, cocktails and tasty hor d’ourves with your ALD friends. Let’s propel upward together to 2013!
Low-Level Laser Therapy (LLLT) regenerates tissue, reduces inflammation and edema, and induces an analgesic effect wherever the beam is applied, but these effects are dose dependent. What are the mechanisms, what is dose, how much is enough, and how much is too much? If the beam irradiance (intensity) is too weak then there may be no effect; if the beam is too strong then the effects may be abolished. Having an analgesic effect, however, requires a different approach. This presentation sums up the key mechanisms and required doses to achieve the desired effects of LLLT in dentistry.

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.

Educational Objectives
1. Summarize the LLLT mechanism of action at the cellular level.
2. Identify which lasers work best for LLLT, and determine whether surgical lasers also produce a therapeutic effect.
3. Enumerate the variety of uses of LLLT in a dental practice.
4. Identify approaches where LLLT may be used to relieve patient pain.

The objective of this presentation is to provide an explanation of the current theories on how low-level laser therapy (LLLT) interacts with cells, thereby affecting target and adjacent tissues. This energy is absorbed into the cells and activates many chemical reactions which stimulate the cell’s metabolism to a faster rate. This lecture updates current knowledge of what occurs in all tissue, whether it is endothelium, nerve, bone, soft tissue, or a blood cell. With LLLT, the cell does what it usually does, only better and faster. How can clinicians use this to their benefit while helping the patient with therapies ranging from wound healing to expeditious orthodontic treatment? This presentation will explore uses of LLLT and will provide the latest settings for various lasers.

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.

Educational Objectives
1. Understand low-level laser therapy mechanisms for tissue repair, reducing inflammation and edema, and inducing analgesia.
2. Define the terms wavelength, power, irradiance, time, joules, and J/cm².
3. Understand beam irradiance, and determine how much is enough, how much is too much.

The purpose of this study was to conduct a randomized, blinded, controlled clinical investigation based evaluation of Low-Level Laser Therapy (LLLT) to determine its clinical efficacy as initial pain reduction therapy in chronic TMD patients.

Method
Twenty-nine patients were selected by application of criteria from the Research Diagnostic Criteria/Temporomandibular Dysfunction (RDC/TMD) questionnaire. Treatment was alternated between active or sham laser therapy. For active treatment, each patient was treated by multiple laser devices, including 810 nm at 200 mW, 810 mW, and 1 W, and a 660 nm and 850 nm light-emitting diode (LED) with 1390 mW aggregate, to tender points and selected anatomic points, each for a specific clinical effect. All subjects were treated 5 times within a 2-3 week period. Primary outcomes were measured by the change in a 100 mm self-reported visual analog scale (VAS) for pain. Secondary outcomes measured included the Short-Form 36 (SF-36) for quality of life analysis. Measurements were taken at baseline and 1-2 weeks following treatment.

Results
The mean VAS score for active treatment improved by 36.93 from a mean of 59.46. The sham placebo therapy improved by 10.23 from a mean of 55.7 (P < .001). Significant improvements were seen also in the active group compared to the control in SF-36® physical scores (SF-36 PCS) (P < .001) and SF-36 mental scores (SF-36 MCS) (P < .047).

Conclusion
Conclusions indicate that LLLT was successful in significantly reducing short-term pain (measured 2 weeks post-treatment) when applying the parameters in this study to chronic TMD pain patients.

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.

Educational Objectives
1. Summarize the use of LLLT as a physical therapeutic modality for chronic TMD.
2. Identify the difference in clinical therapy for chronic vs. acute pain.
3. Discuss the particulars of method of application of LLLT, sequence, dose and dose rate.
An Integrative Approach to Cure Chronic Soft Tissue Injury in the Masseter Muscle

Steve Liu, LAc, BSEE
HanLing Acupuncture Healing Center, Inc., Tucson, Arizona, USA

Western medicine identifies three healing stages for all soft tissue injuries. When these three stages of healing proceed naturally, healing progresses quickly. However, when healing is disrupted, acute pain becomes chronic with its associated disabilities. One such pain in the cheek’s masseter muscle often is misdiagnosed for temporomandibular joint (TMJ) or facial pain of unknown origin. Patients with this type of injury complain of pain in the cheek when chewing and biting with limited range of oral opening.

Acupuncture often has been highly effective for treating acute soft tissue lesions for thousands of years. Due to the nature of the Western medical care system, most of the patients that acupuncturists in the West see in their clinics are chronic pain patients who have not been helped by Western modalities such as pain medications, nonsteroidal anti-inflammatory drugs (NSAIDs), icing, and cortisone shots. It is not uncommon that these patients seek help from acupuncturists 3 months or more after the onset of pain. By this time, typical acupuncture is no longer effective in curing the chronic condition within a reasonable number of treatments.

This presentation will cover the theory of the three stages of healing soft tissue and introduce an integrative approach to effectively cure chronic soft tissue injuries in the masseter muscle within 5 to 10 clinic visits. The technique integrates Western and acupuncture modalities: osteopathic cross-fiber massage, electro-acupuncture with far-infrared heat, and low-level laser therapy. Each modality will be briefly explained for its role in resolving the chronic nature of soft tissue pain.

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.

Educational Objective
1. Discuss the diagnosis and integrated treatment of chronic soft tissue injury in the cheek’s masseter muscle.

Amelioration of Oral Mucositis Pain by NASA Near-Infrared Light-Emitting Diodes in Bone Marrow Transplant Patients

Harry Whelan, MD, Brian Hodgson, DDS
Medical College of Wisconsin, Milwaukee, Wisconsin, USA

This study seeks to investigate the use of extraorally applied near-infrared phototherapy for the reduction of oral pain secondary to chemotherapy- and radiation therapy-induced mucositis in adult and pediatric hematopoietic stem cell transplant (HSCT) patients.

Method
Eighty HSCT patients were divided into regular (R) and low (L) risk groups, then into experimental (E) and placebo (P) groups, resulting in four groups (ER, EL, PR, PL). Experimental subjects received irradiation from a 670 (±10) nm gallium-aluminum-arsenide light-emitting diode device for 80 s at ≈50 mW/cm² energy density and power exposure of 4 J/cm². Placebo patients received a placebo phototherapy (identical device but <5 mW/cm² energy density). Patients received their respective light therapy once per day starting on the day of the HSCT (day 0) and continued through day +14. Blinded evaluators examined the patients three times per week and scored their oral tissues and patient-reported pain assessments at each evaluation, utilizing the World Health Organization (WHO), National Cancer Institute Common Terminology Criteria for Adverse Events (NCI-CTCAE), and Oral Mucositis Assessment Scale (OMAS) criteria.

Results
Analysis of the mean scores at each observation demonstrate that the extraoral application of phototherapy resulted in a significant reduction in patient-reported pain between the ER and PR patients (P < 0.05) at day +14 when graded via the WHO criteria. The ER and EL patients were improved in almost all other categories and assessment scales, but the differences were not statistically significant.

Conclusions
Phototherapy demonstrated a significant reduction in patient-reported pain as measured by the WHO criteria in the patient population included in this study. Improvement trends were noted in most other assessment measurements.

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.

Educational Objective
1. Describe the results of a randomized, double-blind, multicenter treatment placebo clinical trial for external light therapy prevention of oral mucositis pain.
Introduction
Cell migration plays an important role in tissue repair and regeneration. Although laser phototherapy (LPT) can regulate cellular functions, little is known about its key role in optimizing cell migration and tissue engineering. The aim of this study was to investigate optimal parameters of LPT and its potential effects on cellular migration.

Material and Methods
Dental follicle cells were seeded and treated with mitomycin to inhibit cellular proliferation. A 660-nm diode laser (DMC Dental, São Paulo, Brazil) was used at various output powers (30, 50, or 100 mW), distances (0, 4, or 8 mm), and time (60, 120 or 180 s). Horizontal cell migration was measured after 48 hours under a microscope. Proliferation was analyzed using the MTS assay. The data was statistically analyzed (P < 0.05). To observe three-dimensional migrations against gravity, 8 x 1 mm gelatin-filled glass tubes were placed perpendicularly to the bottom of cultured plates. Cells were stimulated with laser (50 mW, 60 s) or bone morphogenetic protein 2 (BMP-2), platelet derived growth factor BB (PDGF-BB). After 3 days, cells were stained with calcein acetyoxymethyl (calcein AM) and observed under microscope.

Results
LPT at 4 and 8 mm distances significantly increased horizontal migration and proliferation, regardless of power and time. LPT performed at 0 mm distance significantly increased cell proliferation but not migration. Vertical cell migration was observed in all groups, but more remarkable results were observed when the laser alone or in combination with growth factors were tested.

Conclusion
LPT stimulated cell growth, horizontal migration, and three-dimensional cell migration against gravity in vitro. Thus, this therapy could have clinical application in promoting cellular recruitment to wound sites for tissue regeneration.

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.

Educational Objectives
1. Review the basics of the low-level laser and its electromagnetic properties.
2. Summarize the effects of laser irradiation on cell mobility.
3. Recognize possible different effects of various laser power settings on cell migration.
4. Describe future clinical applications of low-level lasers on dental tissue regeneration.

Introduction
Laser phototherapy (LPT) is able to increase cellular metabolism, and thus influence the odontogenic differentiation of human dental pulp stem cells (hDPSCs). Certain growth factors, such as platelet derived growth factor (PDGF) and bone morphogenetic protein 2 (BMP-2), are also involved in dentinogenesis and tissue repair. The aim of this study was to analyze the effects of LPT with and without growth factors on odontogenic differentiation of hDPSCs.

Material and Methods
Cells were grown in a regular medium (G1) and irradiated (G2), mineralizing medium (G3) and irradiated (G4), mineralizing medium containing PDGF (G5) and irradiated (G6), mineralizing medium containing BMP-2 (G7) and irradiated (G8). For irradiated groups, LPT was performed in punctual and contact mode with a 660-nm diode laser with a beam spot area of 0.028 cm² (DMC Dental, Indium-Gallium-Aluminum-Phosphide (InGaAlP) – visible red). The following laser parameters were used: power 20 mW; fluence 5 J/cm²; and time 7 seconds/point. Differentiation was assessed by the subsequent analysis: expression of genes related to odontogenic differentiation (dentin sialophosphoprotein [DSPP], dentin matrix acidic phosphoprotein 1 [DMP-1], and osterocalcin [OCN]) using quantitative real-time quantitative reverse transcription polymerase chain reaction (qRT-PCR); alkaline phosphatase (ALP) activity and calcium deposition using alizarin red staining on days 3, 7, and 14.

Results
Analysis of Variance (ANOVA) and Tukey’s test (P < 0.05) were used. On day 14, the expressions of odontogenic genes were significantly higher in G8. Similarly, G8 exhibited the highest alkaline phosphatase (ALP) activity on day 3 and the largest amount of calcium deposits on day 14.

Conclusion
The highest level of odontogenic differentiation of hDPSCs was observed when LPT was applied in association with BMP-2, suggesting that a combined LPT+BMP-2 therapy could have a beneficial clinical application in treating dental pulp exposure.

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.

Educational Objectives
1. Summarize the process of dentinogenesis and tissue repair.
2. Relate the basic concept of tissue engineering and its use in clinical dentistry.
3. Recognize the effects of laser phototherapy in odontogenic differentiation of dental pulp stem cells.
4. Realize the future clinical application of laser phototherapy on dental tissue regeneration.
Cellular Evaluation of Healing Cell (Fibroblast) After Laser Radiation

Seyed Masoud Mojahedi Nasab, PhD, Norbert Gutknecht, DDS, PhD
AALZ (Aachen Dental Laser Center), Aachen, Germany

The state of the laser science with respect to photo-engineering of wound healing and evaluation of healing cells (fibroblasts) with the assistance of a low-level laser is the focus of this research. The use of low-level laser irradiation is based on biostimulation of the tissues with monochromatic light, which stimulates biological and cellular changes during healing; this could have the maximum effect on biological changes and protein production which lead to faster cellular metabolism and finally lead to faster healing.

Method
Prepared fibroblasts cells were irradiated with a low-level laser (diode laser, 810 nm) to investigate the cellular changes (fibroblast proliferation and deposition of proteins) after laser irradiation and to compare the results with a nonirradiated control group.

Results and Conclusion
Analysis of all groups showed that the amount of proteins in all groups increased. This apparent increase in cell metabolism could be one of the main factors for a faster healing process.

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.

Educational Objective
1. Recount the scientific basis for cellular positive effects with regard to protein production with laser stimulation.

Laser Applications in Traumatic Injuries to the Periodontal Tissues

Dr. Claudia Giulia Caprioglio
University of Pisa, Pisa, Italy

Traumatic injuries involve all the branches of dentistry (endodontics, restorative, periodontics, oral surgery, orthodontics) such that traumatology can be considered a multidisciplinary pursuit. Laser technology is very effective and contributes to the reduction of postoperative sensitivity through a minimally invasive and highly selective technique. In addition, it is an alternative method for nonvital bleaching and for solving esthetic and aesthetic problems. Indirect trauma involves all the periodontal structures, in particular the teeth, gingivae, alveolar bone, periodontium, gingiva, ligaments, frenum, and lips. The Nd:YAG and diode lasers have a beneficial therapeutic action in traumatic injuries to the periodontal tissues. These lasers have a decontaminating (bactericidal) effect, as well as a biostimulating and reparative effect, with no need for suture, good and rapid healing by secondary intention, and minor discomfort for the patient. The increase in tissue temperature that these lasers produce has an excellent coagulative and hemostatic effect. In all luxation injuries the bactericidal effect of Er:YAG, Nd:YAG, diode, and argon lasers provide favorable conditions for the attachment of periodontal tissue. Laser decontamination and/or laser photobiomodulation can be used for tissue repair (cutaneous and subcutaneous tissue irradiation) and for pain relief. Low-level laser therapy (LLLT) stimulates tissue repair processes and, by influencing a large number of cell systems, can also have antalgic and anti-inflammatory effects. In summary, lasers are very effective in all clinical situations and can provide a minimally invasive treatment.

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.

Educational Objectives
1. Describe the classification and management of traumatic dental injuries.
2. Understand the practical use of different laser wavelengths in cases of dental traumatic injuries.
3. Choose the proper laser instrumentation to treat a dental trauma.
Academy of Laser Dentistry

ORAL SURGERY TRACK

ORAL SURGERY TRACK

LLLT 1.12 Low-Level Lasers and Photobiomodulation
Saturday 4:00 p.m. - 4:30 p.m., Rooms 109-110

Low-Level Laser Therapy, Truth or Fiction: A Review
Shally Mahajan, BDS, MDS; Vipul Srivastava, BDS, MDS
Babu Banarasi Das College of Dental Sciences (BBDDCDS), Lucknow, India

Hard and soft tissue lasers have been widely used in modern dentistry. Low-level laser therapy (LLLT) is a newly developing modality in dentistry, although it has been used among medical, dental, physiotherapy, and veterinary professions in some parts of the world for decades. LLLT can offer tremendous therapeutic benefits to patients, such as accelerated wound healing and pain relief. This paper provides an outline of the biological effects of LLLT and summarizes the findings from controlled clinical studies of the use of LLLT for specific hard and soft tissue applications in dentistry.

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.

Educational Objectives
1. Review LLLT literature to become aware of indications for this technology in dentistry.
2. Evaluate the controversies regarding LLLT.
3. Specify ways of incorporating the LLLT treatment option in one’s dental practice.

Keywords: Low-level laser therapy; Wound healing; Biostimulation; Photosensitization

ORAL SURGERY TRACK

OS 1.1 Lasers in Oral Surgery
Saturday 8:00 a.m. – 8:40 a.m., Room 111

The Use of an Erbium Laser in the Placement of a Subepithelial Connective Tissue Graft in Natural and Implant Teeth
Edward Kusek, DDS
Private Practice, Sioux Falls, South Dakota, USA

This presentation will show by clinical slides and video how to use an erbium laser for greater success and aesthetics compared to traditional methods. A number of cases will be presented using split thickness reflection, pocket reflection, and vertical releasing. The advantages that were gained from each incision will be discussed. Simple use of an erbium laser to increase the success of the graft will be shown.

Educational Objectives
1. Explain how to utilize an erbium laser to affect the outcome of a connective tissue graft.
2. Describe how to utilize an erbium laser to increase the aesthetics and maintain the success of the case.
3. Specify how lasers can shorten the healing time compared to traditional methods of placing a connective tissue graft.
4. Explain how placing a connective tissue graft around implants can become more predictable with the use of an erbium laser.

OS 1.2 Lasers in Oral Surgery
Saturday 8:40 a.m. – 9:00 a.m., Room 111

Jay Sher, DDS
Private Practice, Livingston, New Jersey, USA

Dentists are often confronted with challenging clinical situations, but probably none more daunting than preserving a tooth that has developed deep subgingival decay or sustained a cuspal fracture which separated at the alveolar crest. Many young practitioners are quick to deem a tooth unrestorable and immediately defer to extraction followed by a dental implant. Laser-assisted crown lengthening can be a viable alternative to preserve the natural tooth structure.

Current considerations in treatment planning for retention of the natural tooth will be reviewed and laser-assisted crown lengthening will be highlighted. Several clinical cases will be presented with a clear step-by-step approach to assure clinical success for postsurgical dental restorations.

Educational Objectives
1. Identify the beneficial use of lasers in crown lengthening procedures.
2. Describe specific techniques to achieve successful results from crown lengthening procedures.

WITHDRAWN
A Retrospective Comparison of Surgical Management Using Different Wavelength Lasers on Patients with Oral Submucous Fibrosis

Nitin Agarwal, MDS
Sardar Patel Institute of Dental and Medical Sciences, Lucknow, India

Oral submucous fibrosis (OSMF) is a chronic debilitating disease of the oral cavity characterized by inflammation and progressive fibrosis of the submucosal tissues (lamina propria and deeper connective tissues). Oral submucous fibrosis results in marked rigidity and an eventual inability to open the mouth. The buccal mucosa is the most commonly involved site, but any part of the oral cavity can be involved, even the pharynx. OSMF in later stages invariably leads to trismus due to retromolar fibrosis and buccal mucosa involvement. A wide range of treatments such as medical management and surgical therapy have been attempted in the past, with medical treatment having a limited role once trismus has become established.

Various lasers for surgical management have been used with varying success to relieve trismus in cases of OSMF. Very little literature exists that compares the results of these different lasers in the surgical management of OSMF with trismus. This study presents and compares the results of different lasers (diode, Er:YAG, and Nd:YAG lasers) for surgical management of this condition.

Educational Objectives
1. Evaluate different treatment options for oral submucous fibrosis.
2. Compare and evaluate different wavelengths of lasers for the treatment of this condition.

OS 1.4 Lasers in Oral Surgery
Saturday 9:30 a.m. – 9:50 a.m., Room 111

Laser-Assisted Treatment of Impacted and Displaced Cuspids

Claus Neckel, MD, DDS
Private Practice, Bad Neustadt, Germany

Cuspids have the highest probability of dislocation and impaction. Uncovering and orthodontic advancement are treatments of choice. The aim of this study was to evaluate the efficacy and safety of a laser-assisted procedure to uncover impacted cuspids. 250 patients were treated over more than 15 years. Lasers utilized were:
1. Ora-Laser IST 01, Oralia, Konstanz, Germany (CW 1.5 W)
2. Ora-Laser Jet 20, Oralia (20 W, 10,000 Hz, 110 pulse-pause-ratio [PPR])
3. Claros, Elexxion, Radolfzell, Germany (30 W, 12,500 Hz, 9 µsec pulse width [PW])
4. Nano, Elexxion (15 W, 15,000 Hz, 16 µsec PW)

All devices were diode lasers emitting at 810 nm and used with a 400-micron diameter glass fiber. After surgical soft tissue exposure the bracket was bonded intraoperatively.

Results
Intraoperative bleeding could be managed sufficiently. It was possible to apply the bracket immediately. Postoperative loosening of the appliance was minimal. Long-term vitality of the cuspids showed no negative thermal interaction.

Educational Objective
1. Evaluate the efficacy and safety of a laser-assisted procedure to uncover impacted cuspids.

CO₂ Laser Depigmentation: A Case Presentation

Michael Kelly, DMD
Private Practice, Scottsdale, Arizona, USA

History: A 21-year-old female presented to the office with a request to lighten the color of her dark gingiva. She was not sure what could be done, but thought that since we were a “cosmetic” office, she would ask. Her medical history revealed no contraindications for routine dental treatment. We discussed that the treatment was for purely cosmetic purposes and was elective in nature. A CO₂ laser (DENTA 2, GPT Dental, Fairfield, Neb., USA) was selected and set as follows: Char-free mode, 300-µs pulse duration, 40 Hz using the long cone tip and the air set to 2. The tissue was kept moist throughout the procedure using an irrigation syringe and water. The superficial gingiva was dehydrated. The tip was held approximately 1 mm from the gingival, proceeding in a circular pattern until the entire area was treated. In between passes, the dehydrated tissue was removed by wiping the area with a moistened 2 x 2 gauze. This procedure was repeated until no evidence of the melanin pigmentation remained. Postoperative instructions were given to the patient.

Educational Objectives
1. Identify that the CO₂ laser is a potentially successful tool for laser-assisted depigmentation procedures.
2. Specify the general protocols for CO₂ depigmentation.
Nd:YAG Lasers in Pigmented and White Lesions in the Oral Cavity
Swati Gupta, BDS, MDS; Vipul Srivastava, BDS, MDS; Tasveer Fateem
Babu Banarsi Das College of Dental Sciences (BBDCODS), Lucknow, India

The advantages of lasers include a relatively bloodless surgical and postsurgical course, coagulation, vaporization, and cutting, reduction in surgical time, minimal or no suturing, and, in a majority of cases, much less or no postsurgical pain, minimal swelling and scarring. The free-running pulsed Nd:YAG laser produces bursts of photonic energy rather than a continuous beam and therefore emits higher peak power with tissue cooling during off-time. This property has a certain degree of advantage over continuous-wave CO₂ lasers where laser energy is comparatively difficult to control and often produces a charring effect on soft tissues with increased thermal collateral damage accompanied with greater postoperative discomfort and increased healing time.

The bactericidal effect and excellent hemostasis adds to the ease and efficiency of Nd:YAG lasers in intraoral soft tissue procedures. The presentation attempts to display the efficacy of Nd:YAG lasers in pigmented and white lesions of oral cavity.

Educational Objective
1. Study the efficacy of Nd:YAG laser treatment of pigmented and white lesions of the oral cavity.

Soft Tissue Surgery Using Er:YAG (2940 nm) and Nd:YAG (1064 nm) Lasers
Lawrence Kotlow, DDS
Private Practice, Albany, New York, USA

This presentation will cover a multitude of soft tissue procedures that can be completed by pediatric dentists and orthodontists. Discussion will include biopsy selection, gingival recontouring, phase 3 (adult) orthodontics, mandibular, maxillary, and lingual frenectomies on children and teenagers, aphthous ulcers, and herpes lesions. Lasers used include Er:YAG (PowerLase AT and LightWalker) and Nd:YAG (LightWalker).

Educational Objectives
1. Expand the use of the Er:YAG and Nd:YAG lasers in providing soft tissue surgery for children in both the practice of orthodontics and pediatric dentistry.
2. Consider the concept of phase 3 orthodontics as a final step in the completion of orthodontic cases.
3. Realize that many of the procedures dentists often refer to other practices can be safely and easily completed by using a laser.
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Biographies and Disclosures

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Prof. Sebastiano Andreana, DDS, MS, University of Buffalo, Buffalo, New York, USA
Dr. Andreana is an associate professor and director in the Department of Implant Dentistry, University at Buffalo, School of Dental Medicine. He has served as president of the American Association for Dental Research, Buffalo Chapter, and is a reviewer for the Journal of Periodontology, Journal of the American Dental Association, Clinical Oral Implant Dentistry and Related Research, and Lasers in Medicine and Surgery. He is the chair of the Science and Research Committee and chair of the University and Academia Relations Committee. He is a senior associate editor of the Journal of Oral Implantology.

Dr. Giussepe Bray, Private Practice, Valdagno (Vicenza), Italy
Dr. Bray graduated in medicine and surgery from the University of Padua, Italy in 1982 and he specialized in Endodontics and conservative Prosthetics at the University of Verona in 1985. He also achieved a Diploma of Education in Aesthetic Medicine in 2007 at the International Fatebenefratelli Foundation in Rome. In 2009 he started utilizing the erbium laser for endodontic applications with the Photon-Induced Photoacoustic Streaming (PIPS) methodology. He developed his own therapeutic protocol using PIPS methodology.

Dr. Mel Burchman, DDS, Private Practice, Langhorne, Pennsylvania, USA
Dr. Burchman has maintained a general dentistry practice in Bucks County, Pennsylvania since 1976. He began using lasers in 1999 and now has 8 lasers in his practice. He has Standard Proficiency in diode and Er:YAG lasers from the ALD and Associate Fellowship in Er,Cr:YSGG from the World Clinical Laser Institute (WCLI). Dr. Burchman holds Advanced Proficiency in Nd:YAG, received his Certificate of Mastership, and received Educator status from the ALD. In November 2003, Dr. Burchman received the “Science Behind the Clinic of Laser Dentistry” award at the 2nd Annual Academy of Laser Dentistry, Israeli Chapter meeting for his presentation entitled “Nd:YAG and Diode Laser Therapy in Medically Compromised Patients.” He is the chairman of the ALD Certification Committee and head of the ALD’s Mentoring Program. In 2003, his office was written up in Men’s Health magazine in an article entitled, “The Drill Is Gone.” He has presented at the ALD conference five times.

Dr. Juliana Barros, DDS, MS, University of Texas School of Dentistry (UTSD), Houston, Texas, USA
Dr. Barros received her degree from the University of Uberaba, Brazil and her postgraduate training in Restorative Dentistry at the University of Michigan School of Dentistry. In addition, she received a master’s degree in Laser Dentistry from the Instituto de Pesquisas Energéticas e Nucleares (IPEN) and University of São Paulo, Brazil. She became the director of Dental Laser Studies, and designed a didactic and lab-based teaching curriculum for laser education at UTSD. She also collaborated with the UTSD’s Endodontic Department where she studied the effects of indirect low-level laser irradiation on the migration and proliferation of dental follicle progenitor cells. She is currently collaborating with the University of Texas MD Anderson Cancer Center in studying the effectiveness of low-level laser therapy (LLLT) on oral mucositis in head and neck cancer patients. She is also working with UTSD’s Orthodontic Department in investigating the effects of LLLT on bone regeneration and healing. She is a member of ALD’s University and Academia Relations Committee.

Dr. Greg Altshuler, PhD, DrSc, Palomar Medical Technologies, Inc., Burlington, Massachusetts, USA
Dr. Altshuler graduated from University of Fine Mechanics and Optics in Saint Petersbur, Russia where he received his PhD and held the position of professor and chair of the Department of Laser Physics and Biomedical Optics. His main research lies in the fields of laser physics, light-tissue interaction, laser dermatology, and dentistry. Dr. Altshuler serves as a Senior Vice President of Research & Development at Palomar Medical Technologies, Inc. in Burlington, Massachusetts, and serves as a Scientific Advisor of Dental Photonics Inc., located in Walpole, Massachusetts. He is author and co-authors of 6 books, more than 190 papers, and 110 patents.

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Ms. Canham is a dental speaker and consultant specializing in Infection Control and Occupational Safety and Health Administration (OSHA) compliance. She is the founder of Leslie Canham & Associates, which provides programs for associations and study clubs, in-office training, mock inspections, consulting, and online webinars to help dental teams meet state and federal regulations. Her fast-paced and entertaining programs have earned her the reputation as an outstanding speaker in dentistry. Ms. Canham is recognized as a continuing education provider by the California Dental Board and is authorized by the Department of Labor as an OSHA Outreach Trainer in General Industry Standards.  
**Disclosure:** Ms. Canham is the founder of Leslie Canham & Associates.  
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**Claudia Giulia Caprioglio, DDS, University of Pisa, Pisa, Italy**  
Dr. Caprioglio received her DDS from Pavia University in Italy in 1988. She received a postgraduate degree in Orthodontics at the University of Cagliari in Italy, holds master’s degrees in TMJ dysfunctions (University of Cagliari), in lasers in dentistry (University of Florence), and in dental traumatology. She has been a visiting professor at the University of Parma in Italy for many years. She is lecturer for the European Master Degree in Oral Laser Applications (EMDOLA) course. Dr. Caprioglio is author of many scientific papers, six textbooks, and contributor to four. She has published in several journals and is an internationally recognized speaker. In 1992 she cofounded the Italian Society of Dental Traumatology and the Italian Society of Sports Dentistry. She is a board member of the Italian Society of Pediatric Dentistry. Her research is related to interceptive orthodontics, dental traumatology, and laser-assisted pediatric dentistry.  
**Disclosure:** Dr. Caprioglio has no commercial or financial interest relative to this presentation.  
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**A. Rick Cardoza, DDS, Private Practice, El Cajon, California, USA**  
Dr. Cardoza is a general dentist in El Cajon, California. He first incorporated dental lasers into his practice in 2001 for both hard tissue and soft tissue applications. He is a member of the Academy of Laser Dentistry, Academy of Clinical Technology, and a Fellow of the World Clinic Laser Institute. Dr. Cardoza lectures extensively throughout the United States and Canada on the topics of both lasers and forensic dentistry.  
**Disclosure:** An honorarium for Dr. Cardoza’s presentation has been paid by Technology4Medicine.  
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**Mr. James Carroll, AMInstP, FRSM, THOR Photomedicine, Chesham, United Kingdom**  
Mr. Carroll started work in the field of low-level light therapy (LLLT) / photobiomodulation in 1988 when he helped raise funds for the Guy’s Hospital Tissue Repair Research Unit in London with investigations into why light improves wound healing. He is currently collaborating with Harvard Medical School, Harvard-Massachusetts Institute of Technology, Massachusetts General Hospital, Harvard School of Public Health, and the Sydney Brain and Mind Institute on the effect of light on traumatic brain injury, cancer, analgesia, and the mechanisms by which light impacts cellular function and disease status.  
**Disclosure:** Mr. Carroll is founder / CEO of THOR Photomedicine.  
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**Louis Chmura, DDS, MS, University of Michigan, Marshall, Michigan, USA**  
Dr. Chmura is an orthodontic specialist with extensive experience using diode lasers in orthodontics. He was one of the first orthodontists to use lasers and has earned Standard Proficiency in two diode laser wavelengths. He is the first orthodontic Fellow of the Academy of Laser Dentistry (ALD) and the first orthodontist to achieve Advanced Proficiency. Dr. Chmura has written numerous articles and authored “Soft Tissue Lasers in Orthodontics,” a chapter in Principles and Practice of Laser Dentistry (Convissar RA, editor. St. Louis, Mo: Mosby Elsevier, 2010). He performed two live laser procedures simulcast during the 2010 American Association of Orthodontists (AAO) meeting and presents nationally on soft tissue lasers and other technologies. He hosts both in-office courses and webinars on technology integration.  
**Disclosure:** Dr. Chmura has received honoraria from AMD Lasers and Spectra Lasers.  
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**Bryant Cornelius, DDS, MBA, Moab Dental Health Center, Moab, Utah, USA**  
Dr. Cornelius graduated from Northwestern University Dental School in Illinois and from the David Eccles School of Business at the University of Utah. He is a member of the Academy of Laser Dentistry and practices with Dr. Jeff Cornelius in southeastern Utah. They have been incorporating lasers into their practice for many years and are proficient in four different laser wavelengths.  
**Disclosure:** Dr. Cornelius has reported no commercial affiliations or personal conflicts of interest relative to this presentation.  
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Dr. Cornelius graduated from the University of Louisville School of Dentistry in Louisville, Kentucky. He is a member of the Academy of Laser Dentistry and practices with Dr. Bryant Cornelius in southeastern Utah. They have been incorporating lasers into their practice for many years and are proficient in four different laser wavelengths.  
**Disclosure:** Dr. Cornelius has reported no commercial affiliations or personal conflicts of interest relative to this presentation.  
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**Jeema Dad, The University of Texas Health Science Center School of Dentistry, Houston, Texas, USA**  
Jeema Dad is a second-year dental student at The University of Texas Health Science Center at Houston School of Dentistry. She has had the pleasure of working under the guidance of Dr. Ali Obeidi. She looks forward to presenting her research on acid etching, mechanical debridement, and different bonding generations for enamel prepared by Er,Cr:YSGG laser.  
**Disclosure:** Dr. Dad has reported no commercial affiliations or personal conflicts of interest relative to this presentation.  
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Mark Dincher, DMD, MS, Tufts University Dental School, Boston, Massachusetts, USA

Dr. Dincher graduated from the University of Pittsburgh in 1977. He received an MS in craniofacial pain from Tufts University Dental School in 2011. He maintains a general dentistry group practice, and his interests are in chronic disease and pain.

Disclosure: Dr. Dincher has reported no commercial affiliations or personal conflicts of interest relative to this presentation.
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Enrico DiVito, DDS, Arizona Center for Laser Dentistry, Scottsdale, Arizona, USA

Dr. Enrico DiVito has been in practice since 1980. He established and runs the Arizona Center for Laser Dentistry in Scottsdale, Arizona. He is always exploring potential uses for innovations in the field and holds a number of patents for dental products. He lectures nationally and internationally. Dr. DiVito is the founder and director of the state-accredited Arizona School of Dental Assisting. He also teaches as a clinical instructor at the Arizona School of Dentistry and Oral Health and is responsible for helping to create and implement their Department of Laser Dentistry. In 2007 he was awarded the Biolase Clinical Case of the Year.

Disclosure: Dr. DiVito receives honoraria from Lares Research for lectures on laser dentistry. He is also a shareholder in Medical Dental Advanced Technology Group, which has performed the research for PIPS™.
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Dr. Caterina Faccin, Private Practice, Verona, Italy

Dr. Faccin graduated in medicine and surgery from the University of Padua in Italy in 1982 with cum laude honors of distinction and specialized in dentistry at the University of Verona in 1985. Her work has focused on pediatric dentistry and orthodontics. Dr. Faccin uses an erbium laser for endodontic applications and orthodontics. Dr. Faccin uses an erbium laser for endodontic applications with the Photon-Induced Photoacoustic Streaming (PIPS) methodology. She has developed a therapeutic protocol using PIPS methodology for her patients.

Disclosure: Dr. Faccin has reported no commercial affiliations or personal conflicts of interest relative to this presentation.
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Roy George, BDS, MDS, PhD, Griffith University, Gold Coast, Queensland, Australia

After qualifying as a dentist in 1994, Dr. George completed his master’s degree in Endodontics (1999) and his PhD in 2009 (mid-infrared lasers in Endodontics). He has held various teaching positions since 2001 and is presently a senior lecturer and discipline lead in endodontics. He has published in a number of peer-reviewed journals in the field of lasers and endodontics.

Disclosure: Dr. George has reported no commercial affiliations or personal conflicts of interest relative to this presentation.
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William R. Gianni, DDS, Private Practice, Twain Harte, California, USA

Dr. Gianni graduated from the University of California, San Francisco School of Dentistry. He has maintained a full-time private practice in Berkeley, California for 16 years. With 20 years of laser and early adopter technology experience, he is a unique blend of clinical pioneer, technological innovator, and passionate teacher. He is a co-author of the Curriculum Guidelines and Standards for Dental Laser Education, and has achieved ALD’s Educator, Advanced Proficiency, and Recognized Course Provider status. Dr. Gianni is a former faculty member of P.A.C live and the Las Vegas Institute for Advanced Dental Studies (LVI). His professional aim is to gain as much as he gives, as he educates dental professionals from around the world on the safe and effective use of dental lasers and technologies, while encouraging everyone’s passion for the art, science, and craft of dentistry.

Disclosure: Dr. Gianni has a financial interest in Kainos Dental Technologies, LLC, a dental laboratory.
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Douglas Gilio, DDS, University of Southern California, Los Angeles, California, USA

Dr. Gilio is a graduate of the University of California, San Francisco School of Dentistry. He received his certificate in Periodontology in 1981 at the University of Southern California School of Dentistry. He is an assistant clinical professor in the Department of Advanced Periodontics at University of Southern California, a consultant to the Central California Veterans Hospital, and clinical attending supervisor for the General Practice Residency (GPR) program. He has achieved advanced proficiency with the Nd:YAG laser wavelength and is a fellow of the American Society for Laser Medicine and Surgery. Dr. Gilio obtained Educator status from ALD.

Disclosure: Dr. Gilio has no commercial relationships relative to this presentation. He has no financial interest in any laser company.
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J. Courtney Gorman, DDS, Private Practice, Marion, Indiana, USA
Dr. Gorman practices orthodontics in Marion, Indiana and is associate professor of Orthodontics at Indiana University School of Dentistry. He is world-renowned for his expertise in the delivery of lingual orthodontic treatment, lecturing extensively on the subject for more than a decade. Recently, he has focused his lectures on the use of lasers in orthodontics. He has authored numerous articles in a variety of professional publications on such topics as lingual orthodontics, emerging orthodontic technologies, and the use of lasers in orthodontics. Personally, Dr. Gorman is passionate about his family, big mountain skiing, golf, ocean sailing, and fishing.
Disclosure: Dr. Gorman has reported no commercial affiliations or personal conflicts of interest relative to this presentation.
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Dr. Swati Gupta completed her postgraduate studies from the Faculty of Dental Science King George Medical College Lucknow, India and is presently working as a professor in the Department of Prosthodontics in Babu Banarasi Das College of Dental Sciences (BBDCODS), Lucknow. She has a keen interest in the use of different laser wavelengths in the treatment of benign lesions of the oral cavity. Along with Dr. Hemant Gupta, an oral surgeon, she is conducting research on laser applications on a variety of intraoral procedures with lasers.
Disclosure: Dr. Gupta has reported no commercial affiliations or personal conflicts of interest relative to this presentation.
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Dr. Hayashihara is an accredited member and Councilor of the Japanese Society of Conservative Dentistry and an accredited member and Fellow of the World Clinical Laser Institute (WCLI). He is a part-time lecturer at Osaka Dental University and part-time lecturer at the Hiroshima University Dental School.
Disclosure: Dr. Hayashihara is president of the Juseikai Medical Corporation in Hiroshima, Japan.
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John Hendy, DDS, MS, University of Southern Oregon, Ashland, Oregon, USA
Dr. Hendy is a 1977 graduate of the University of the Pacific, San Francisco, California. He first began using lasers more than 10 years ago. He is a Fellow of the World Clinical Laser Institute (WCLI) and a 2009 graduate of the Master of Laser Dentistry program at the University of Vienna, Austria.
Disclosure: Dr. Hendy has performed research for Biolase Technologies and Technology4Medicine, LLC.
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Charles Hoopingarner, DDS, Private Practice, Houston, Texas, USA
Dr. Hoopingarner attended the University of Texas Health Science Center at Houston (UTHSCH) Dental Branch, graduating with a DDS in 1973. He has maintained a private practice in Houston, Texas since 1973. He was an adjunct associate professor in anatomical sciences at UTHSCH Dental Branch for 11 years. Currently, he is adjunct clinical faculty in the Restorative Dentistry Department at UTHSCH and has been a clinical instructor at the Las Vegas Institute for reconstruction and laser dentistry. Dr. Hoopingarner is a member of the Board of Directors of the Academy of Laser Dentistry and has used dental lasers of various wavelengths as integral parts of his patient care delivery system for the last 11 years. He holds Advanced and Standard Proficiency certifications in the Er:YAG wavelength from the ALD and has lectured internationally on the safety and use of laser technology in the dental practice.
Disclosure: Dr. Hoopingarner has no direct financial or ownership positions with commercial companies related to this presentation. He has received honoraria and expenses from GPT to present material on laser dentistry.
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Philip Hudson, DDS, Private Practice, Spokane, Washington, USA
Dr. Hudson maintains a full-time family practice in Spokane, Washington. He holds the Mastership Level of educational certification with the World Clinical Laser Institute (WCLI), and has earned ALD Advanced Proficiency Certification in three laser wavelengths. Dr. Hudson has served in numerous capacities within the Academy and was recognized as a Dental Laser Educator and a Standard Proficiency Dental Laser Course Provider. He has written and published “Diode Laser Soft Tissue Surgery” in three volumes, for general dentists. His articles in the Journal of the American Dental Association and Compendium reflect his interest in conservative care issues. Since 1990, he has utilized the following laser wavelengths in his practice: Nd:YAG, argon, CO₂, Diode (660, 810, 904, 940, and 980 nm), Er:YAG, and ErCr:YSGG.
Disclosure: Dr. Hudson has received honoraria for providing laser education for Biolase Technology. He is an instructor for Advanced Laser Training and is a Partner in Team Laser Training of North America.
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Dr. Kelly is a practicing dentist with Aesthetic Dentistry of Scottsdale. He received his Mastership with the Academy of General Dentistry (AGD) and the International College of Oral Implantology. He is an Accreditation Candidate with the American Academy of Cosmetic Dentistry (AACD). Dr. Kelly also serves as a clinical instructor with Aesthetic Vision Seminars, teaching practical hands-on courses in cosmetics, digital dentistry and laser dentistry. He is an avid supporter of organized dentistry with memberships in the AGD, ALD, AACD, Florida Academy of Cosmetic Dentistry (FACD), International Congress of Oral Implantologists (ICOI), and the International Academy of Oral Medicine and Toxicology (IAOMT). After practicing in Orange City, Florida for 17 years, he moved in 2010 to join his friend and mentor Dr. Edward Miller in Scottsdale.

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

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Dr. Kesler is a lecturer at Tel Aviv University School of Dentistry Department of Oral Rehabilitation and is head of the Dental Laser Clinic. He has published research papers on bone healing. Dr. Kesler is an Educator and Recognized Standard Proficiency Course Provider of the ALD. He serves the ALD as chair of the International Relations Committee and is nominated for the 2012 elected position of Secretary for the ALD.

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

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

Dr. Kotlow is a Board-certified pediatric dentist and has a pediatric dental practice in Albany, New York. As a member of the ALD he achieved Advanced Proficiency in the Er:YAG laser, Standard Proficiency in the diode and Nd:YAG lasers, and Mastership status. He has lectured nationally and internationally on the use of lasers in pediatric dentistry. He has contributed chapters in three textbooks and published more than 30 articles on lasers and their use in hard and soft tissue procedures on children and newborns. He is a founding member of the International Affiliation of Tongue-Tie Professionals (IATP).

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

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

Dr. Kusek is a 1984 graduate of the University of Nebraska School of Dentistry. He is a Diplomate of the American Board of Oral Implantology/Implantology/Implant Dentistry, a Fellow of the American Academy of Implant Dentistry and Academy of Laser Dentistry. He earned Mastership in the Academy of General Dentistry and World Clinical Laser Institute and Advanced Proficiency in the Academy of Laser Dentistry. He is an adjunct professor at the University of South Dakota and lectures nationally and internationally on the erbium laser and dental implants.

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

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V. Kim Kutsch, DMD, Private, Practice, Albany, Oregon, USA

Dr. Kutsch received his undergraduate degree from Westminster College in Utah and then completed his DMD at University of Oregon School of Dentistry in 1979. He is an inventor and holds numerous patents in dentistry. He serves as a product consultant, is an internationally recognized speaker, a past president of the Academy of Laser Dentistry and the World Congress of Minimally Invasive Dentistry (WCMID). He has served on the board of directors for the World Clinical Laser Institute (WCLI) and the American Academy of Cosmetic Dentistry (AACD). As an author, Dr. Kutsch has published dozens of articles and abstracts on minimally invasive dentistry, carries risk assessment, digital radiography, and other technologies in both dental and medical journals and contributed to several textbooks. He also acts as a reviewer for several journals. As a clinician he is a graduate and mentor in the prestigious Kois Center and maintains a private practice in Albany, Oregon.

Disclosure: Dr. Kutsch is the CEO of Oral Biotech.

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Arthur B. Levy, DMD

Dr. Arthur Levy has been a proponent of laser use in dentistry since December 1990. He assisted in the formation of the Metropolitan Academy of Laser Dentistry in New York and New Jersey in 1991 and has been an active force in the Academy of Laser Dentistry since its formation in 1993. He has been in private practice in Chester, New Jersey since 1985 and has taught in dental school and continuing education programs throughout the world. Dr. Levy serves as the Academy of Laser Dentistry 2012 Scottsdale Conference Chairman and President-Elect.

Disclosure: Dr. Levy has no commercial or financial interest relative to this presentation.

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Mr. Steve Liu, LAc, BSEE, HanLing Acupuncture Healing Center, Inc., Tucson, Arizona, USA

Mr. Liu is a licensed acupuncturist from Tucson, Arizona. He was an electrical and laser engineer in Silicon Valley where he was involved in the design of world’s first erasable optical disk drive using semiconductor laser diodes. He has combined low-level laser therapy with acupuncture to treat pain conditions since 2000 when he was first researching the clinical use of laser acupuncture. Mr. Liu has been a member of the North American Association for Laser Therapy (NAALT) since 2001 and served as its president in 2008 and 2009. He is also the President Emeritus of Arizona Society of Oriental Medicine and Acupuncture. He founded the American Society for Laser Acupuncture Therapy. Besides his acupuncture practice, Steve wishes to be more involved in the research and education of low-intensity lasers and laser acupuncture therapy.

Disclosure: Mr. Liu has reported no commercial affiliations or personal conflicts of interest relative to this presentation.  
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Mitchell Lomke, DDS, Private Practice, Olney, Maryland, USA

Dr. Lomke has been in private practice as a general dentist in Montgomery County, Maryland for more than 32 years. He graduated from the University of Maryland Dental School in 1979. His general practice residency was in the U.S. Public Health Service (USPHS) from 1979 to 1980. Dr. Lomke is an ALD Recognized Course Provider as well. His general practice residency program as a member of the Dean’s faculty at the University of Maryland Dental School in Baltimore.

Disclosure: Dr. Lomke has no financial interest in any commercial laser company. He conducts lectures and hands-on courses for IvoclarVivadent.  
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Larry Lytle, BS, DDS, PhD, Rapid City, South Dakota, USA

Dr. Larry Lytle is a member of ALD and practiced dentistry for 35 years prior to doing research on lasers and developing and patenting the QLaser System. He also has interests in proprioceptive feedback to the brain from the oral cavity and has developed proprioceptive devices.

Disclosure: Dr. Larry Lytle holds several patents on the QLaser System and consults with several companies.  
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Shally Mahajan, BDS, MDS, Babu Banarasi Das College of Dental Sciences (BBDCODS), Lucknow, India

Dr. Mahajan completed her master’s degree in Orthodontics from Rajiv Gandhi University of Health Sciences (RGUHS), Bangalore, India. Following her interest in laser dentistry she went for training from various forums. She completed her PhD from Babu Banarasi Das College of Dental Sciences and Hospital (BBDCODS), Lucknow, India, as Reader in Orthodontics. She is currently associated with our ALD Affiliate Study Club in India. She was the one of the first to introduce hard tissue lasers in the state and incorporate laser use into her practice.

Disclosure: Dr. Mahajan has reported no commercial affiliations or personal conflicts of interest relative to this presentation.  
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Fred Margolis, DDS, Private Practice, Highland Park, Illinois, USA

Dr. Margolis is a clinical instructor at Loyola University’s Oral Health Center and an adjunct clinical assistant professor at the University of Illinois College of Dentistry, Chicago, Illinois. He has Mastership certification from the World Clinical Laser Institute (WCLI) and the Academy of Laser Dentistry, where he has also achieved advanced and educator certification. Dr. Margolis was recently selected as a top continuing education lecturer for 2010-2011 by Dentistry Today. He has published articles in both lay and professional journals, as well as Beautiful Smiles for Special People, a course manual for dental personnel interested in working with disabled patients. He is also co-author of Pediatric Laser Dentistry: A User’s Guide, Quintessence Publishing, 2011. He is in full-time private practice of pediatric dentistry in Buffalo Grove, Illinois.

Disclosure: Dr. Margolis receives and honorarium and products from Biolase Technologies, Inc.  
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Dr. Felice Marmoro, Private Practice, Valdagno (Vicenza), Italy

Dr. Marmoro graduated in medicine and surgery from the University of Naples in Italy in 1981. He has been working since 1981 in endodontics and conservative prosthetics. He has been using lasers in endodontics with the Photon-Induced Photoacoustic Streaming (PIPS) methodology, developing his own therapeutic protocol using PIPS methodology.

Disclosure: Dr. Marmoro has reported no commercial affiliations or personal conflicts of interest relative to this presentation.  
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Raminta Mastis, DDS, Private Practice, St. Clair Shores, Michigan, USA

Dr. Mastis graduated from the University of Illinois College of Dentistry in 1987. She is a Master of the Academy of Laser Dentistry. She has Standard Proficiency certifications in Er:YAG, diode, Er,Cr:YSGG, and CO₂ laser wavelengths, and has achieved Advanced Proficiency in the Er:YAG wavelength. She currently serves as the chair of ALD’s Laser Safety Committee; serves on the Certification and Communications Committees, and serves on the ALD Board. She maintains a private dental practice, Michigan Cosmetic and Laser Dentistry, in St. Clair Shores, Michigan. She has been using lasers since 2000, and now has 18 lasers of various wavelengths in her practice. Her practice is highlighted by implant surgery and restoration, laser dentistry, esthetic and cosmetic dentistry, and integration of advanced technologies into practice.

Disclosure: Dr. Mastis has no commercial or financial interest relative to this presentation.

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Ms. Jeanette Miranda, RDH, BS, Sioux Falls, South Dakota, USA

Ms. Miranda has practiced dental hygiene for 31 years and has worked with dental lasers for 7 years. She has achieved diode laser Standard Proficiency with the World Clinical Laser Institute (WCLI) and ALD, and diode laser Fellowship status with the WCLI. She is a member of ALD and serves on the Laser Safety Committee and as vice chair for the Auxiliary Committee. In addition to lecturing on periodontal treatment with lasers, she teaches diode laser courses with Dr. Edward Kusek and Dr. Fred Margolis.

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

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Ms. Gloria Monzon, RDH, Advanced Laser Hygiene, Milpitas, California, USA

Ms. Monzon has enjoyed 26 years in the dental hygiene profession. Her passion is to make a difference in patients’ lives. She has used lasers since 1993 and has earned Advanced Proficiency 1998 on diode and Nd:YAG laser wavelengths. In 1999, she achieved UCSF/ALD Educator Status, and in 2002 became an ALD Recognized Course Provider. She has served as certification examiner and educator for Academy of Laser Dentistry and the World Clinical Laser Institute (WCLI). She has made numerous presentations for the ALD and WCLI. With nearly 18 years of teaching experience, she has lectured throughout the United States and internationally. She heads Advanced Laser Hygiene consulting and prides herself as a “Hygienist training fellow hygienists.”

Disclosure: Ms. Monzon has no commercial relationship relative to this presentation.

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Ms. Angie Mott, RDH, Private Practice, Tulsa, Oklahoma, USA

Ms. Mott has been a clinical hygienist for over 20 years. She is a member of the Academy of Laser Dentistry, where she obtained her Advanced Proficiency and Educator Status, and received her ALD Recognized Course Provider and her Mastership. Ms. Mott is currently serving as Auxiliary Chair for the ALD Board of Directors and serves on the Regulatory Affairs, Education, Membership, and the Scientific Sessions Committees. She is also an In-Office Laser Consultant with the ALD and the Las Vegas Institute. She is a past presenter for the ALD and RDH Under one Roof. She has authored several published articles and has written chapters for laser books. Ms. Mott is in the process of co-authoring her own book about laser hygiene. She works clinically with lasers 4 days a week in dental hygiene.

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

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Terry D. Myers, DDS, Private Practice, Bloomfield Hills, MI, USA

Dr. Terry Myers has been researching the use of lasers in dentistry since 1983. His early work resulted in the development of the Nd:YAG dental laser, which he invented and patented with this ophthalmologist brother, Dr. William D. Myers. It is the first laser in the world designed specifically for general clinical dentistry. Since graduation from the University of Detroit Dental School in 1973, Dr. Myers has maintained a private practice in the metro Detroit area of Michigan. He has held positions at various universities in the Detroit area. He also has interests in veterinary dentistry, and has delivered dental care at the Detroit Zoological Parks. Dr. Myers has authored articles on his work and is an internationally recognized speaker, having conducted hundreds of laser dentistry and air abrasion lectures and workshops throughout the world.

Disclosure: Dr. Myers is a cofounder and president of Incisive, L.L.C.

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Seyed Masoud Mohajedi Nasab, DDS, PhD, Norbert Gutknecht Aachen Dental Laser Center (AALZ), Aachen, Germany

Dr. Nasab received his DDS from the Ajman University of Science and Technology, United Arab Emirates. He is affiliated with the AALZ (Aachen Dental Laser Center) in Aachen, Germany. He is the Official Academic Co-worker of AALZ and adjunct faculty member of RWTH Aachen University. He holds multiple degrees, including Medical Science (MdSc) with a thesis in hematology, Doctorate (DDS) with a thesis in lasers in dentistry, Master of Science (MSc) with a thesis in the effect of lasers on bone tissue, and PhD with a thesis on low-level laser-assisted healing procedures in periodontal surgery. He is a member of the American Dental Association and the Deutschen Gesellschaft für Laserzahnheilkunde (DGL) (German Association for Laser Dentistry).

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

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Claus Neckel, MD, DDS, Private Practice, Bad Neustadt, Germany

Dr. Neckel has done clinical training in neurosurgery, otolaryngology, and maxillofacial surgery at the University of Würzburg. He is a former member of the Staff of the Clinic for Maxillo-Facial Surgery at the University of Würzburg. He works in private practice limited to maxillofacial surgery, periodontics, and implant surgery with Dr. B. Kubik. The office is associated with the dental group practice of Drs. B. Neckel, H. Streit, C. Kubik, T. Lazutin, and V. Lazutin and orthodontist Dr. B. Orth. He is graduate of the Master class in advanced periodontology and implantology of the University of California Los Angeles. He was a guest lecturer of the European Society for Oral Laser Applications (ESOLA), the Ernst Moritz Arndt Universität (EMAU) Greifswald in Germany, and the University of Genoa in Italy.

Disclosure: Dr. Neckel has reported no commercial affiliations or personal conflicts of interest relative to this presentation.
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Lawrence Nurin, DDS, BS, Private Practice, Annapolis, MD, USA

Dr. Nurin has been actively practicing as a periodontist for 38 years in Annapolis, Maryland and has used lasers in his practice for more than 21 years. He is currently using 3 different laser wavelengths and has 8 laser devices. He has been an associate professor of periodontics at the University of Maryland and has lectured across the country and internationally. He was a founding member of the Academy of Laser Dentistry, and is a life member of the Academy of Periodontology and the American Dental Association. He is a member of the Pierre Fauchard Academy and a staff member of the Anne Arundel Medical Center in Annapolis.

Disclosure: Dr. Nurin has lectured for the Biolase Company and the American Dental Laser Company as a paid consultant.
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Professor Giovanni Olivi, MD, DDS, University of Genoa, Rome, Italy

Dr. Olivi practices endodontics, restorative, and pediatric dentistry in Rome, Italy. He is a professor of endodontics and restorative dentistry at the School of Dentistry and at the Laser Dentistry Master Course at the University of Genoa. He achieved the Master status from the Academy of Laser Dentistry in 2007. Dr. Olivi is a recipient of the Leon Goldman Award for clinical excellence from ALD. He is author of more than 40 articles on pediatric and laser dentistry topics and co-author of the books 'Laser in Dental Traumatology Dentale' (in Italian, Martina Publishing, Bologna, Italy, 2010) and 'Pediatric Laser Dentistry: A User's Guide' (in English, Quintessence Publishing, Chicago, Illinois, USA, 2011).

Disclosure: Dr. Olivi has reported no commercial affiliations or personal conflicts of interest relative to this presentation.
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Chris Owens, DDS, Advanced Laser Training, Inc., Laguna Hills, California, USA

Dr. Owens is a graduate of the Louisiana State University (LSU) Dental School in New Orleans, Louisiana, and is the founder and owner of Advanced Laser Training, Inc. He has lectured all over the world on subjects ranging from cosmetic and implant dentistry to lasers. He is a founding member of the World Clinical Laser Institute (WCLI) where he has received his Mastership status as a certified laser educator. Dr. Owens is a past board member of ALD. Dr. Owens’ accomplishments include over 400 articles, 65 presentations, and 40 publications on laser and implant dentistry. Presenting hundreds of lectures on high-tech dentistry, lasers. His passion is teaching high-tech dentistry and the clinical and business side of laser dentistry.

Disclosure: Dr. Owens is the owner of Advanced Laser Training, Inc. and provides training throughout the United States and abroad. He has affiliations with the following companies, all located in California: World Clinical Laser Institute and Biolase, Irvine, California; Philips Dental (Lasers), Los Angeles, California; DenMat, Santa Maria, California; AMD / Dentsply Laguna Niguel, California; HOYA ConBio, Santa Clara, California; Beamer Dental, California; Millenium Dental, Cerritos, California; Laser Dental Innovations, San Jose, California; DC International, Wellington, Florida; and Technology4Medicine, San Clemente, California.
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Peter K. Pang, DDS, Private Practice, Sonoma, California, USA

Dr. Pang is in private general practice in Sonoma, California. He holds Mastership with the Academy of General Dentistry (AGD) and the Academy of Laser Dentistry (ALD). He also holds Advanced Proficiency and Educator status with the ALD and is a Recognized Course Provider for Standard Proficiency Courses. Dr. Pang is a visiting faculty member of LVI Global and is an AGD-registered Program Approval for Continuing Education (PACE) course provider.

Disclosure: Dr. Pang is a speaker and trainer for Technology4Medicine.
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Dr. Patel joined the University of Texas Health Science Center School of Dentistry at Houston in 2008 after practicing dentistry in the private sector for 7 years. She joined Dr. Juliana Barros, Director of Dental Laser Studies, in designing a didactic and lab-based teaching curriculum for laser education at the University of Texas School of Dentistry (UTSD). Her interest in low-level laser dentistry has allowed her to present lectures and continuing education classes at local, state, and national levels. She also collaborated with the UTSD’s Endodontic Department and was able to study the effects of indirect low-level laser irradiation on the migration and proliferation of dental follicle progenitor cells. She is collaborating with the MD Anderson Cancer Center in studying the effectiveness of low-level laser therapy (LLLT) on oral mucositis in head and neck cancer patients, and with UTSD’s Orthodontic Department in investigating the effects of LLLT on bone regeneration and healing.

Disclosure: Dr. Patel has reported no commercial affiliations or personal conflicts of interest relative to this presentation.
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Robert M. Pick, DDS, MS, Private Practice, Chicago and Aurora, Illinois, USA

Dr. Pick received his Dental Degree (1980), Certificate of Residency in Periodontics (1982), and his Master of Science Degree in Oral Pathology (1983) all from Northwestern University Dental and Medical Schools. He is currently engaged in full-time private practice of periodontics and implants in Chicago and Aurora, Illinois. He is also a member of the attending staff of Northwestern Memorial Hospital and a Clinical Associate Professor of Surgery at Northwestern University Feinberg School of Medicine. Dr. Pick is a Fellow in both the American and International College of Dentists and is an official spokesperson for the American Dental Association on implants, periodontics, and lasers. He has published numerous articles in the scientific literature, has authored and co-authored numerous chapters on periodontics, implants, and lasers for various textbooks and manuscripts, and co-edited the text Lasers in Dentistry (Quintessence, 1995).

Disclosure: Dr. Pick is CEO of Pick Consulting Corporation, a practice management firm.

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Ronald Porth, DMD, Private Practice, Abbotsford, British Columbia, Canada

Dr. Porth is a general practitioner in Abbotsford, British Columbia. He has published original articles on lasers, microabrasion, esthetics, crown and bridge, and restorative dentistry. He has presented his laser-assisted endodontic studies internationally at conferences of the International Society for Lasers in Dentistry (ISLD), Academy of Laser Dentistry (ALD), and European Society for Oral Laser Applications (ESOLA).

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

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Gerry Ross, DDS, Private Practice, Tottenham, Ontario, Canada

Dr. Ross has been using low-level lasers in his general practice since 1993. He has written approximately 20 papers and has presented more than 100 lectures on the subject at both dental meetings and low-level laser meetings. He has completed several research projects and is currently investigating the use of lasers for anaesthesia. Dr. Ross holds Advanced Proficiency through ALD’s certification program, and Fellowship status with the American Society for Laser Medicine and Surgery (ASLMS). He is the current vice president of the North American Association for Laser Therapy (NAALT).

Disclosure: Dr. Ross is president of Laser Light Canada which sells various phototherapy products. His presentation will discuss only wavelengths and no commercial products will be mentioned.

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Jay Sher, DDS, Private Practice, Livingston, New Jersey, USA

Dr. Sher graduated from Columbia University College of Dental Medicine in New York City followed by a General Practice Residency and Oral Implantology Fellowship at Brookdale Hospital in Brooklyn. He has been an attending at several hospital programs over the years and has recently joined the attending staff at the Beth Israel Hospital in Newark, New Jersey. He has authored and co-authored numerous articles appearing in dental journals, co-authored a chapter in a book on dental implants, and has a patent for a dental implant insertion device. Dr. Sher has lectured both nationally and internationally on various topics including occlusion and dental implants. He is a Fellow of the Academy of General Dentistry and American College of Dentists, belongs to many dental organizations, and just completed a year as President of the Essex County Dental Society in New Jersey. He has been involved with dental lasers since 2003, having been trained for his Standard Proficiency by his mentor and friend, Dr. John Graeber. He uses his Er:YAG, CO2, and diode lasers daily in his busy general practice in Livingston, New Jersey.

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

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Paul Silver, DMD, Private Practice, Raymond, New Hampshire, USA

Dr. Silver graduated from Tufts University School of Dental Medicine in 1978 and owns a group dental practice where 3 general dentists, a periodontist, and a team of hygienists all use lasers in the care of their patients. He holds Standard Proficiency in 4 laser wavelengths (Nd:YAG, CO2, diode, and Er:YAG) and is LANAP® (Laser-Assisted New Attachment Procedure) certified. There are 11 lasers of 5 different wavelengths in his Dental Center; biostimulation lasers and superluminous diode clusters are used for laser therapy biostimulation. Dr. Silver earned Certified Laser Education status through the Institute for Advanced Laser Dentistry (IALD) in 2003.

Disclosure: Dr. Paul Silver has had and still has a variety of industry-funded projects including training and consulting for Laser Dentistry Resources, Medx Health, Ivoclar Vivadent, Bright Smile, Millennium Dental Technologies, Vero Nobis, HOYA ConBio, HE Innovations, and Sullivan Schein Dental, for which he receives compensation. He is an independent educator and teaches through his own training company, Laser Dentistry Resources.

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Ms. Mary Lynn Smith, RDH, BM, McPherson, Kansas, USA

Ms. Smith has been a registered dental hygienist for 17 years in both Texas and Kansas. She holds Standard Proficiency in both the Nd:YAG (1064 nm) and diode (810 nm) lasers and received her Advanced Proficiency status in 2007 with the Nd:YAG laser wavelength. She has contributed to the dental community through lectures, hands-on workshops, and published works. She considers it a privilege to be among other laser users and shares from her own joy of daily dental hygiene practice.

Disclosure: Mary Lynn Smith consults independently for DEKA Laser Technologies, Inc. and has been compensated.

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A graduate of the University of Michigan, Mr. John Sulewski serves as the director of education and training for The Institute for Advanced Dental Technologies. He is a consulting editor for the Journal of Laser Dentistry, and a member of the Academy of Laser Dentistry’s Scientific Sessions, Certification, Conference, Ethics, Communications, Safety, Science and Research, and Awards 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 of the Institute for Advanced Dental Technologies. He has served as a paid consultant for American Dental Technologies; Continuum Biomedical; Incisive, LLC; and Millennium Dental Technologies.

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Stephen Tracey, DDS, MS, Private Practice, Upland, California, USA

Dr. Tracey is an internationally recognized lecturer, with past presentations made in 22 countries on six continents. Well-known for his expertise and involvement with aesthetic orthodontic treatment and emerging orthodontic technologies, Dr. Tracey was one of the first orthodontists to embrace the use of lasers in orthodontics. He has authored numerous articles on laser dentistry including the first article in the orthodontic literature on use of the diode laser. He also co-authored the chapter “Lasers in Orthodontics” in the recently published 5th edition of the textbook Orthodontics: Current Principles and Techniques, edited by Lee W. Graber, Robert L. Vanarsdall, and Katherine W.L. Vig (Philadelphia, Pa.: Elsevier, 2012).

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

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Dr. Whelan is the Bleser Family Endowed Chair in Neurology at the Medical College of Wisconsin. A native of Milwaukee, Wisconsin, he is a graduate of University of Wisconsin School of Dental Medicine and Public Health, Board-certified in neurology, with special qualification in child neurology as well as undersea and hyperbaric medicine. He has received research funding from the National Institutes of Health (NIH), National Aeronautics and Space Administration (NASA), and the Defense Advanced Research Projects Agency (DARPA). He was also the recipient of the American Cancer Society’s Clinical Oncology Career Development Award, and in the year 2000 was inducted into the NASA Base Technology Hall of Fame. He has more than 100 publications in photobiology research and is currently focusing on the basic molecular mechanism of light therapy. Dr. Whelan is also a Captain in the United States Navy assigned as Undersea Medical Officer to the U.S. Marine Corps and Special Operations Command.

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

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