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A comprehensive four day conference covering all aspects of laser safety practice and hazard control.

Featuring:
- Laser Safety Scientific Sessions
- Technical Practical Applications Seminar
- New for 2011! Medical Practical Applications Seminar – Earn contact hours while experiencing cutting-edge presentations
- Awards Luncheon
- “Hot Topic” Luncheon

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Laser Applications and Safety

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ILSC® 2011 is the pinnacle of laser safety meetings. The conference has evolved to include two tracks which significantly benefit the laser safety community. The first track is the Laser Safety Scientific Sessions (LSSS). These are technical sessions with presentations by recognized world-wide experts in a variety of fields relevant to the cutting-edge in laser safety. This is the traditional conference content as organized in previous ILSC conferences. The second track is the Practical Applications Seminars (PAS), now with both technical laser safety and medical laser safety components. These PAS sessions have grown into a favorite of the working laser safety officer, with relevant discussions about the day-to-day challenges they face. This year, laser safety experts from around the world will descend on San Jose, California to discuss and define the latest updates to regulations and common practice in the field. As new and novel laser applications push the envelope of modern technology, protection of personnel from complex laser hazards is paramount to assuring success. At ILSC 2011, the technologist and safety professional will acquire new skills and sharpen current processes to ensure their organization is up to date on laser safety. Come and join us and rub shoulders with laser safety professionals from throughout the world as we tackle your biggest concerns.

Special Thanks to the ILSC® 2011 International Advisory Board

Jerome Dennis, Consultant - Chairman, IEC TC 76, Gaithersburg, MD, USA
Ben Edwards, Duke Univ., Durham, NC, USA
Roy Henderson, Bioptica, Cambridge, Great Britain
Jay Parkinson, Phoenix Laser Safety LLC, Chandler, AZ, USA
Karl Schulmeister, Seibersdorf Laboratories, Seibersdorf, Austria
David Sliney, Consulting Medical Physicist, Fallston, MD, USA
John Tyrer, Loughborough Univ., Leicestershire, Great Britain
Kunihiko Washio, Paradigm Laser Research Ltd., Tokyo, Japan

Opening Plenary Session

Plenary Session Chair:
Benjamin Rockwell, Air Force Research Laboratory, Brooks City-Base, TX, USA

“Lasers and You”

The ILSC Opening Plenary Session, “Lasers and You”, will feature two exciting presentations relating to laser safety hot topics. Dr. Kay Ball will be presenting “Lasers in Health Care Today.” Kay Ball is a Nurse Consultant and Educator at K & D Medical, Inc., as well as an Associate Professor at Otterbein University, and speaks from her extensive experience on this subject. The second presentation will also feature a significant issue in laser safety today. Both speakers will bring critical information to all laser safety professionals and will address the current relevant topics for all ILSC attendees.

Invited Speaker:
Kay Ball, Ph.D, RN, CNOR, FAAN
K & D Medical, Inc.
Associate Professor, Otterbein Univ.
Lasers in Health Care Today

Welcome
**ILSC® 2011 Conference Agenda**

**Sunday, March 13**
- 9:00am  ASC Z136 Annual Meeting
- 1:00pm  Registration Desk Open
- 4:00pm  Welcome Reception

**Monday, March 14**
- 7:00am  Registration Desk Open
- 8:30am  Opening Plenary Session: Lasers and You
- 9:00am  Bookstore Open
- 10:20am Morning Break
- 10:40am LSSS Session 1: Safety Standards
- 12:00pm Awards Luncheon
- 2:00pm  LSSS Session 2: Laser Safety Training
- 3:20pm  Afternoon Break
- 3:40pm  LSSS Session 3: Practical Laser Safety

**Tuesday, March 15**
- 8:00am  Registration Desk & Bookstore Open
- 8:30am  LSSS Session 4: Laser Eye Protection
- 9:50am  Morning Break
- 10:20am LSSS Session 5: Non-Beam Safety Considerations
- 11:40am  Lunch on own

**Wednesday, March 16**
- 8:00am  Registration Desk & Bookstore Open
- 8:30am  LSSS Session 8: Bioeffects I
- 9:50am  Morning Break
- 10:20am LSSS Session 9: Bioeffects II
- 11:45am  Hot Topic Luncheon

**Thursday, March 17**
- 8:00am  Registration Desk & Bookstore Open
- 8:30am  LSSS Session 12: Risks from Non-Laser Optical Sources
- 9:50am  Morning Break
- 10:20am LSSS Session 13 – Hazard Evaluation & Risk Assessment
- 11:40am  Lunch on own

*Program Subject to Minor Changes*
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Welcome Reception
Join us on Sunday afternoon for pre-conference festivities at the Welcome Reception. Greet new attendees and catch up with old friends. Kick off the conference in a casual and friendly environment. Door prizes will be raffled off during the reception.

Awards Luncheon
The opening day of ILSC features an Awards Luncheon and presentation presided over by LIA Executive Director, Peter Baker. Share in the honors shown to the George M. Wilkening Award and the R. James Rockwell Jr. Educational Achievement Award winners. Meet the LIA staff and enjoy lunch with old and new friends.

Sponsor Reception
The ILSC Sponsor Program provides several levels of sponsorship to give your company the opportunity to connect with Laser Safety Scientific Sessions (LSSS), Technical Practical Applications Seminar and Medical Practical Applications Seminar (PAS) attendees. All sponsor levels include booth space at the Tuesday evening Sponsor Reception. For more information, please contact the LIA Marketing Department at +1.407.380.1553 or +1.800.34.LASER.

Closing Plenary
“The Laser Safety Beat”
Thursday, March 17 • 1:30pm

Laser Institute of America presents the George M. Wilkening Award to recognize individuals who have made extensive contributions to laser safety in science, medicine, industry or education.

The George M. Wilkening Award is presented to:
Benjamin Rockwell

The R. James Rockwell Jr. Educational Achievement Award is presented in recognition of outstanding contributions in laser safety education.

The R. James Rockwell Jr. Educational Achievement Award is presented to:
Vangie Dennis

“Hot Topic” Luncheon
Join a moderated panel discussion led by experts in the laser safety industry.

Moderator: Jay Parkinson, Phoenix Laser Safety LLC, Chandler, AZ, USA

The 2011 George M. Wilkening Award is presented to:
Benjamin Rockwell

The 2011 R. James Rockwell Jr. Educational Achievement Award is presented to:
Vangie Dennis

Laser Accidents: A Fifty-Year Review (C101)
William Ertle, Rockwell Laser Industries

Proposed Changes of the Retinal Thermal MPEs (C102)
Karl Schulmeister, Seibersdorf Laboratories

Dazzling and High-Powered Laser Pointers (C104)
Leon McLin, Air Force Research Laboratory

Building a Laser Safety Culture (C103)
Ken Barat, Lawrence Berkeley National Lab

Progress with Lamp Safety Standards (C105)
David Sliney, Consulting Medical Physicist

The closing plenary session will feature five of the most requested laser safety topics. The topics will include laser accident reports, changes to thermal exposure limits, laser dazzling of personnel, building a laser safety culture and safety of high-intensity light sources. These topics will be presented by experts in the field who will provide the status of each with clear-cut precision, providing attendees with the latest information for each provocative issue.
Laser Safety Scientific Sessions (LSSS)

Conference Chair: John O’Hagan, Ph.D, Health Protection Agency, Didcot, Great Britain

The International Laser Safety Conference (ILSC®) provides a unique opportunity for viewing the latest research on a wide range of issues relevant to laser safety. It is an opportunity to meet with experts from around the world. Whether you are a seasoned professional or a newcomer, there will be something for you. The Laser Safety Scientific Sessions (LSSS) cover everything from regulations, training, practical hazard and risk issues to fundamental biological research. New for ILSC 2011 is a specific session on non-laser optical radiation risks. This recognizes the growing role of laser safety professionals in providing expert advice for non-laser optical applications. ILSC 2011 also retains many of the key sessions specific to laser radiation safety management. For the laser safety professional – new and old – ILSC 2011 provides a rare opportunity to develop and extend networks that last a lifetime, in a way that no online networking site can match.

LSSS Session 1: Safety Standards
Monday, March 14 • 10:40am
Session Co-chairs: Jerome Dennis, Consultant – Chairman, IEC TC 76, Gaithersburg, MD, USA; William Rothwell, British Telecommunications, Framingham, Woodbridge, Great Britain
Werner Horak, Ronald Neuhaus, Siemens AG
IEC TR 60825-5 Ed. 3.0 Manufacturer’s Checklist - A Guide for Manufacturers Documenting Compliance with IEC 60825-1:2007 Compliance .............................................. (102)
Woody Strzelecki, Food and Drug Administration
The Widely Varying Risk from Class 3R Laser Products in Light of the Revision of IEC 60825-1 .................................. (103)
Karl Schulmeister, Seibersdorf Laboratories
Adaptations to Commercial Safety Standards for Integration into U.S. Air Force Policies ............................................. (104)
Bret Rogers, Brooks Air Force Base

LSSS Session 2: Laser Safety Training
Monday, March 14 • 2:00pm
Session Co-chairs: John O’Hagan Ph.D, Health Protection Agency, Didcot, Great Britain; Ken Barat, Lawrence Berkeley National Lab, Berkeley, CA, USA
Lessons Learned from a Recent Laser Accident ..................... (201)
Michael Woods, SLAC National Accelerator Laboratory
On the Job Training Hit or Miss ....................................... (202)
Ken Barat, Lawrence Berkeley National Lab
Competency in Laser Safety ............................................ (203)
Ian Gillett, Imperial College
A Laser Alignment Practical Training Course ....................... (204)
Michael Woods, Steve Edstrom, SLAC National Accelerator Laboratory

LSSS Session 3: Practical Laser Safety
Monday, March 14 • 3:40pm
Session Co-chairs: Robert Weiner, Weiner Associates, Manhattan Beach, CA, USA; Martin Brose, BG ETEM, Köln, Germany
“Team Time Out” - Competition of Safety Regulations in the Operation Theatre ................................. (301)
Hans-Peter Berdien, Ute Mueller, Evangelische Elisabeth Klinik
Challenges of a Medical Laser Safety Officer ....................... (302)
June Carley, Tampa General Hospital
Does a New Photoablative Laser Set Fire on Endotracheal Tubes? ...................................................... (303)
Wolfgang Wollner, Gunter N. Schmidts, Univ. Medical Center Hamburg-Eppendorf; Andreas Fielder, Laservision GmbH & Co. KG; R.J. Dwayne Miller, Max Planck Research Dept. for Structural Dynamics at the CFEL
Novel Software Platform for Advanced Optical Radiation Safety Analysis ............................................. (304)
Neil Haigh, Blueside Photonics Ltd; Simon Hall, National Physical Laboratory

LSSS Session 4: Laser Eye Protection
Tuesday, March 15 • 8:30am
Session Co-chairs: Roy Henderson, Bioptica, Cambridge, Great Britain; James Sheehy, Naval Air Systems Command, Patuxent River, MD, USA
How to Select Laser Protective Eyewear ............................ (401)
James Sheehy, Christine Stanley, Naval Airwarfare
Confronting a Laser Protective Eyewear Challenge in the Clinical Setting .................................................. (402)
June Carley, Tampa General Hospital
Determining Laser Eye Protection (LEP) Acceptability for Color Appearance by Comparing Two Prediction Metrics: E-94 Score and Color Zone Analysis (CZA) ........................................ (403)
Leedjia Svec, Dave Freeman, Naval Medical Research Unit; William Brockmeier, Thomas Kayk, TASC Inc.; Semih Kimru, Martin Lafrance, U.S. Air Force Research Lab
An International Standard for Laser Eye Protection ............. (404)
Roy Henderson, Bioptica
LSSS Session 5: Non-Beam Safety Considerations  
Tuesday, March 15 • 10:20am
Session Co-chairs: Simon Hall, National Physical Laboratory, Teddington, Middlesex, Great Britain; Ben Edwards, Duke Univ., Durham, NC, USA
Laser Dyes and Solvents ........................................... (501)  
Sharli Frederiksen, Mayo Clinic
Second Harmonic Scattered Photons from Laser Plume  
Due to UV Irradiation ........................................... (502)  
Hamid Reza Dehghanzadeh, Tarbosh Univ.
Radiation Protection Aspects of X-Ray Generated  
from High Intensity Laser Pulse .................................. (503)  
Liu James, Alyssa Prinz, Rui Qiu, Robini Sayed, SLAC
Control of Non-Beam Hazards Under IEC TR 60825-14 ........... (504)  
Roy Henderson, Bioptica
LSSS Session 6: High Power Issues  
Tuesday, March 15 • 1:30pm
Session Co-chairs: Tom Lieb, L’A’T International, Elk Grove, CA, USA; John Tyrer, Loughborough Univ., Leicestershire, Great Britain
Administrative and Engineering Controls for High Power Lasers in Lab, Ground, Sea and Air ................. (601)  
David Burdman, James Hall, David Han, Dan Seaman, Northrop Grumman Aerospace Sector
Why New Test Conditions for Laser Guard ...................... (602)  
Erwin Heberer; Andreas Trautmann, Ingenieurbuero; Joachim Frane, Pihs
Beam Quality Control and Consistent Safety Standard  
for High Power Laser Products .................................. (603)  
Hong Chen, Xuhao Wang, Institute of Laser Engineering, Beijing Univ. of Technology
Addressing Control of Hazardous Energy (COHE)  
Requirements in a Laser Safety Program ...................... (604)  
Michael Woods, SLAC National Accelerator Laboratory
LSSS Session 7: Unique Applications of Laser Safety  
Tuesday, March 15 • 3:20pm
Session Co-chairs: Trevor Wheatley, UNSW at ADFA, Australia; Casey Stack, Laser Compliance, Centerville, UT, USA
Maintaining Laser Safety during Commissioning  
of the Orion High Intensity Laser Facility ...................... (701)  
Steve Melion, Graham White, AWE
Principles for Safe Exposures to Lasers in Human Subjects  
for Non-Therapeutic Research .................................. (702)  
Peter Smith, TASC Inc.; Brian Foutch, Leon McLin, Air Force Research Laboratory
Manufacturing and Approval Requirement Differences  
between FDA/CDRH and DOD .................................. (703)  
LED Safety in Toys ........................................... (704)  
Michael Higlett, Marina Khazova, John O’Hagan, Health Protection Agency

LSSS Session 8: Bioeffects I  
Wednesday, March 16 • 8:30am
Session Co-chairs: Karl Schulmeister, Seibersdorf Laboratories, Seibersdorf, Austria; Bruce Stuck, USAMRD-WRAIR, Brooks City-Base, TX, USA
Retinal Damage Threshold in the 1 ns to 100 ns  
Exposure Duration Range ...................................... (801)  
Brian Lund, David J. Lund, Martin L. Holmes, U.S. Army Institute of Surgical Research; Peter R. Edsall, TASC, Inc.
Characterizing Temperature-Dependent Photo-Oxidation  
to Explain the Abrupt Transition from Thermal  
to Non-Thermal Laser Damage Mechanisms at 413 nm .......... (802)  
Clifton Clark, Michael Denton, TASC, Inc.
Minimum Visible Lesion (MVL) Thresholds in Cynomolgus  
(Macaca Fasicularis) Retina Resulting from Laser Exposure  
at Wavelengths of 413-nm, 532-nm and 647-nm ............... (803)  
Jeffrey Oliver, AFRL/711 HPW/RHDO
Skin Damage Thresholds with Continuous Wave Laser  
Exposures at Near Infrared Wavelengths .................... (804)  
Jeffrey Oliver, AFRL/711 HPW/RHDO
LSSS Session 9: Bioeffects II  
Wednesday, March 16 • 10:20am
Session Co-chairs: Karl Schulmeister, Seibersdorf Laboratories, Seibersdorf, Austria; Bruce Stuck, USAMRD-WRAIR, Brooks City-Base, TX, USA
Manifestations of the Strong Non-Linearity of Thermal Injury ... (901)  
Karl Schulmeister, Mathieu Jean, Seibersdorf Laboratories
Predicted Multiple-Pulse Thermal Damage Thresholds  
and Exposure Limits ........................................ (902)  
Clifton Clark, TASC, Inc.
Spatially-Correlated Microthermography Maps  
Threshold Temperature in Laser-Induced Damage .......... (904)  
Modelling of Laser Induced Injury of the Cornea ................ (903)  
Karl Schulmeister, Mathieu Jean, Seibersdorf Laboratories
LSSS Session 10: Measurements  
Wednesday, March 16 • 1:30pm
Session Co-chairs: Sheldon Zimmerman, Naval Surface Warfare Center, Dahlgren, VA, USA; Anna-Karin Holmer, Saab AB, Huskvarna, Sweden
Spectral Irradiance Measurement and Hazard Analysis  
of a Supercontinuum Source .................................. (1001)  
Kurt Schuster, Edward Early, Harvey Hodnett, Baxter Newton, TASC, Inc.; Alan Nagy, USAF
Assessing the Safety of Entertainment Lighting ................ (1002)  
Ron Bonner, Professional Lighting and Sound Association; Marina Khazova, John O’Hagan, Health Protection Agency
Remote Viewing No Longer a Nice to Do .................... (1003)  
Ken Barat, Michael Ruggieri, Lawrence Berkeley National Lab
Using Semiconductor Detectors for Measuring  
the Output of Lasers Emitting Multiple Wavelengths ........... (1004)  
Woody Strzelecki, Food and Drug Administration
LSSS Session 11: Outdoor Lasers
Wednesday, March 16  •  3:20pm
Session Co-chairs: Michael Higlett, Health Protection Agency, Didcot, Great Britain; Eric Liggins, QinetiQ, Hampshire, Great Britain
Better Safety Management of Lasers Used
for Display Purposes in Live Concert Environments ..........(1101)
James Stewart, LVR Limited
Assessing Audience Exposure at Laser Shows .................(1102)
Michael Higlett, John O’Hagan, Health Protection Agency
Laser Clearinghouse Requirements for Above the
Horizon Laser Illumination by Civilian and Military Entities . . . . (1103)
Richard Rice, David Broadwater, Annamaria Vesely, U.S. Air Force;
Wallace Mitchell, Harvey Hodnett, Baxter Newton, TASC, Inc.
MATILDA: A Laser Range Hazard Assessment Utility ........(1104)
Brian Flemming, SELEX Galileo; Daniel Huantes, TASC, Inc.

LSSS Session 12: Risks from Non-Laser Optical Sources
Thursday, March 17  •  8:30am
Session Co-chairs: David Sliney, Consulting Medical Physicist, Fallston, MD, USA; Tongsheng Mou, Zhejiang Univ., Hangzhou, People’s Republic of China
The Evaluation of Blue Light Hazard Based
on the Luminance of Lighting Sources .......................(1201)
Yan Tian, Mou Tongsheng, Zhejiang Univ.; Jiandong Yu, SENSING Instruments Co., Ltd.
The U.S. Army Public Health Command’s Studies
on the Safe Use of Ultraviolet Germicidal Irradiation ..........(1202)
Stephen Wengraitis, U.S. Army Public Health Command
Expected Changes for the Retinal Thermal Exposure Limits for
Broadband Incoherent Radiation of IEC 62471 and ICNIRP . . .(1203)
Karl Schulmeister, Seibersdorf Laboratories
The Standardization and Regulation of Photobiological
Safety for Non-Laser Sources in China .........................(1204)
Jianping Wang, Juncai Li, SENSING Instruments Co., Ltd; Mou Tongsheng, Zhejiang Univ.

LSSS Session 13: Hazard Evaluation & Risk Assessment
Thursday, March 17  •  10:20am
Session Co-chairs: Ian Gillett, Imperial College, London, Great Britain; Arie Klerk, Ministry of Defense, Den Helder, Netherlands
An Audit of Laser Safety in Universities:
A Comparison to Medical Laser Safety ......................(1301)
Stanley Batchelor, Sharmila Franks, Guy’s & St Thomas’ NHS Foundation Trust; Graham Hart, ‘Your Rpa’
Current Laser Related Activities at FDA’s Center for Devices
and Radiological Health ...........................................(1302)
Robert Doyle, Dan Hewett, Electronic Products Branch, Division of Mammography Quality and Radiation Programs, Office of Communication, Education and Radiation Programs, CDRH

ILSC 2011 Poster Presentations
Join us for the ILSC Poster Session. Posters will be on display for the duration of the conference.
A Green Laser Pointer Hazard (P102)
Jemellie Galang, Joshua Hadler, Alessandro Restelli, Charles W. Clark, NIST; Edward Hagley, Acadia Optronics
An Audit of Laser Safety in Universities: A Comparison to Medical Laser Safety. (P103)
Stanley Batchelor, Sharmila Franks, Guy’s & St Thomas’ NHS Foundation Trust; Graham Hart, ‘Your Rpa’
Hidden Menace: Recognizing and Controlling the Hazards Posed by Smaller and Lower Power Lasers ..........(1303)
Samuel Goldwasser, Sams Laser F.A.Q. and Story Brook Laser Teaching Center; Ben Edwards, Duke Univ.
Laser Safety Program at the University of Toronto..................(1304)
Sandu Sonoc, Univ. of Toronto

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Conference Chair: Vangie Dennis, RN, CNOR, CMLSO, Gwinnett Medical Center, Duluth, GA, USA

As Medical Practical Applications Seminar Chair for the 2011 International Laser Safety Conference (ILSC®), I would like to welcome all attendees to this seminar. The Practical Application Seminar (PAS) is held in conjunction with the ILSC Laser Safety Scientific Sessions (LSSS). ILSC offers comprehensive four-day educational sessions covering all aspects of laser safety practice and hazard control. The first ever Medical Practical Applications Seminar is a two-day seminar for Medical Laser Safety Officers and those who work in operating rooms, surgical centers, aesthetic clinics and medical spas. The Medical PAS planning committee is composed of a very dynamic team of experts with various medical laser experience and knowledge who have put together an exciting and relevant program. Attendees will benefit from the cutting-edge medical laser safety presentations designed with a focus on new and innovative medical laser information.

We believe that this combination will help participants get the most out of each session regardless of experience level or specialty.

Medical PAS Session 1: Experts on the Standards
Monday, March 14 • 10:20am
Panel: Kay Ball, K & D Medical Inc./Otterbein Univ., Westerville, OH, USA; Penny Smalley, Technology Concepts International, Chicago, IL, USA; Leslie Pollard, Southwest Innovative Solutions, Inc., Richardson, TX, USA; Vangie Dennis, Gwinnett Medical Center, Duluth, GA, USA; Anne Lawless, Lumenis, Jacksonville, FL, USA; Patti Owens, Olympic Dermatology and Laser Clinic, Olympia, WA, USA

Lasers are classified as medical devices and are subject to regulation. The Code of Federal Regulations’ Performance Standards for Light Emitting Products provides specifications for manufacturers of medical laser systems. Becoming acquainted with the organizations, laws and standards regulating or affecting the use of lasers in a medical setting familiarizes the healthcare professional with the information necessary to develop and implement an appropriate laser safety program.

Medical PAS Session 2: Aesthetics and Cosmetics: New Technologies and Procedures
Monday, March 14 • 2:00pm
Session Chair: Patti Owens, Olympic Dermatology and Laser Clinic, Olympia, WA, USA

Who can perform aesthetic laser procedures in the United States? If you are uncertain, do not be surprised by the multitude of local, state and national agencies that dictate the present cosmetic market. This lecture will review the growing array of noninvasive aesthetic procedures performed with Lasers, IPL, LED and RF technologies. Also, a discussion will ensue involving the different theories that dictate the present cosmetic market. This lecture will review the growing array of noninvasive aesthetic procedures performed with Lasers, IPL, LED and RF technologies.

Medical PAS Session 3: Yours, Mine and Ours: Laser Responsibilities in the OR
Monday, March 14 • 3:40pm
Session Chairs: Penny Smalley, Technology Concepts International, Chicago, IL, USA; Vangie Dennis, Gwinnett Medical Center, Duluth, GA, USA; Leslie Pollard, Southwest Innovative Solutions, Inc., Richardson, TX, USA

Mobile laser equipment and mobile laser service providers are an important part of healthcare today because of the potential monetary advantage as well as efficiency and effectiveness that these services can provide a healthcare facility requiring the use of lasers with a medical or surgical practice. It is therefore critically important that surgical facilities understand the role that these providers are expected to play as well as understand the responsibility of the facility in terms of maintaining a healthy relationship and partnership with the mobile laser provider. Emphasis is on the importance of establishing a properly documented laser safe facility framework within the facility, choosing and evaluating the mobile provider wisely, and ensuring that the mobile provider does not work independently of the facility but works seamlessly within a properly documented laser safety program structure are discussed within this session.

Medical PAS Session 4: Life and Breath: Surgical Plume, Hazards and Research, Standards and Compliance
Tuesday, March 15 • 8:30am
Session Chairs: Debra Novak, NIOSH, Atlanta, GA, USA; Penny Smalley, Technology Concepts International, Chicago, IL, USA; Kay Ball, K & D Medical Inc./Otterbein Univ., Westerville, OH, USA

Over 500,000 workers are exposed to surgical smoke every year and numerous studies have documented dangerous atmospheric agents in laser smoke plume causing a range of adverse health symptoms and effects. This session will highlight research evidence for why the proper use of local exhaust ventilation (LEV) augmented by the use of properly fitted filtering facepiece respirators are the recommended and effective controls to mitigate laser smoke plume exposures. In addition to NIOSH, the Occupational Safety and Health Administration (OSHA), AORN, Laser Institute of America (LIA), ANSI12 and The Joint Commission (TJC) recommend that surgical smoke be filtered and evacuated through the use of room ventilation and LEV methods. Despite these recommendations, a 2007 survey of 623 AORN members indicated weak compliance by healthcare facilities. Suggested strategies to reinforce practice compliance will be emphasized.

Medical PAS Session 5: Laser Safety “Myth Busters”
Tuesday, March 15 • 10:20am
Session Chairs: Kay Ball, K & D Medical Inc./Otterbein Univ., Westerville, OH, USA; Leslie Pollard, Southwest Innovative Solutions, Inc., Richardson, TX, USA; Anne Lawless, Lumenis, Jacksonville, FL, USA

It is not unusual for medical/surgical facilities to work within a long tradition of laser safety standards without understanding the importance of understanding why certain standards of practice are followed. This session will help the MLSO practitioner understand the importance of not only assisting staff members follow established practices, but also to analyze and understand the basis of these practices such that appropriate hazard analysis responsibilities and appropriate responses can become part of the role and responsibility of the MLSO when the unexpected occurs. A broad array of reported situational events will be presented to the group with a short discussion of the basis of the problem presented as well as an analysis process including resolving the situation or conflict.

Medical PAS Session 6: Cutting Edge: Trends & Variations, New Applications and Safety Updates
Tuesday, March 15 • 1:30pm
Session Chairs: Anne Lawless, Lumenis, Jacksonville, FL, USA; Penny Smalley, Technology Concepts International, Chicago, IL, USA

Since the advent of the laser over the last 50 years, amazing advances in our use and understanding of light has transitioned. Optimization of new medical procedures using the laser has continued advances in the medical and surgical treatments. This educational offering focuses on new advancement and delivery systems with laser medical procedures. The new laser technologies bring a perfect focus to medical advancement.
Conference Chair: Sheldon Zimmerman, CLSO, Naval Surface Warfare Center, Dahlgren, VA, USA

Attendees of the 2011 ILSC will have the opportunity to participate in the third Laser Safety Practical Applications Seminar (PAS), which is, for the first time, divided into a Medical and Technical set of sessions. The PAS is held in conjunction with the International Laser Safety Conference (ILSC) and is designed with both the new and experienced laser safety professional in mind. Previous seminars were very successful and favorably reviewed and many of the original PAS creators have remained involved on the 2011 planning committee. With the experience and knowledge gained from previous seminars, we believe this one will continue to please participants and the 2011 PAS presentations will continue to be very valuable. The current PAS topics were screened by a diverse group of laser safety professionals to ensure that something would be offered that would be useful to laser safety professionals working in all industries. We were fortunate to find topic Chairpersons who not only have great experience and knowledge in laser safety but are also exciting presenters. We believe that this combination will help participants get the most out of each session they attend. So, regardless of your experience level or what industry you are from, you owe it to yourself to check out the PAS topic list.

Medical PAS Session 7: Basics of Photochemistry and Tissue Response to Laser & Light Energy (Transition Seminar)

Tuesday, March 15 • 3:20pm
Session Chair: Leslie Pollard, Southwest Innovative Solutions, Inc., Richardson, TX, USA

The medical facility MLSO Overview: The medical facility MLSO should have a fundamental understanding of tissue or target response to photonic light energy not only for the purpose of assisting the laser program growth and development, but also for the purpose of the critical understanding of basic hazard analysis and the nature of a potential injury to patients or staff with laser energy. This program discusses the fundamental laws of photochemistry, how light is titrated and outcomes are predicted, and the important role of laser delivery devices such as fiber optics and the variations to consider before coupling to a laser system and proper use.

Technical PAS Session 8: Audience Scanning at Laser Light Shows

Wednesday, March 16 • 8:30am
Session Chairs: Greg Makhov, Lighting Systems Design, Inc., Orlando, FL, USA; Patrick Murphy, International Laser Display Association, Orlando, FL, USA

This session will provide a discussion and demonstration of U.S.-legal audience scanning laser shows, FDA/CDRH variances. All exposures are voluntary and are below MPE, and non-exposure area is available.

Technical PAS Session 9: Laser Safety in the Workplace

Wednesday, March 16 • 10:20am
Session Chair: Tom Lieb, L’A’I International, Elk Grove, CA, USA

Sifting through the entirety of ANSI Z136, from part 1 to umpteen, to find just those requirements that pertain to you and your workforce, can be a real daunting task, especially if you been given the job of Laser Safety Officer as an additional duty. This session is designed to provide an overview for designing a Laser Safety Management Program (LSMP) for your facility and some practical guidelines to compliance for organizations of all sizes and budgets. Topics include a discussion of the relevant regulations for manufacturing facilities; basic dos and don’ts for the facilities, and the people in them; overview of types of training and the associated logistics, (for both the budget flexible, and the budget restricted operation); and an outline for conducting a viable LSMP.

Technical PAS Session 10: What Regulations Apply to Me?

Wednesday, March 16 • 1:30pm
Session Chair: Casey Stack, Laser Compliance, Centerville, UT, USA

“What’s my personal and legal liability as an LSO”? “Is ANSI Z136.1 law, or just a good idea? What about OSHA”? “We built our own laser tool; do we have to do anything to be legal”? Do you have any of these questions or others as an LSO, or just a safety conscious laser user? This non-technical session will answer all your questions about state and federal laws, and the differences between standards and regulations both in the US and internationally, on subjects ranging from laser users, to laser product manufacturing, liabilities, penalties and more. Bring your questions, but don’t come to this session just for the fun, and free giveaways, come for the great industry stories!

Technical PAS Session 11: What Control Measures Are Mandatory?

Wednesday, March 16 • 3:20pm
Session Chair: David Sliney, Consulting Medical Physicist, Fallston, MD, USA

The LSO is frequently confronted with the issue of which control measures listed in the ANSI Z136 standards as “shall” are most appropriate and which are mandatory. If there are several control measures achieving the same goal, they are not all actually mandatory, but then how does one select the user controls, and are any really necessary. Some system safety features (as in FDA, IEC standards) do have mandatory requirements independent of the user environment. Sometimes disputes occur between laser users and the LSO with regard to what control measures are essential. In this regard, are there cases where it is essential to stand your ground? In dealing with opposing views, there are various solutions, including using a laser safety committee of experts to review the issue, etc. as sometimes happens in NASA or in a research laboratory.

Technical PAS Session 12: Determination of NHZx / Measurements

Thursday, March 17 • 8:30am
Session Chair: Bob Thomas, U.S. Air Force Research Lab, Brooks City-Base, TX, USA

The session will discuss practical examples of lasers which have non-ideal output characteristics. The talks will be focused on data analysis methods which accurately determine parameters which in turn assess hazards in an accurate and conservative manner. Results will be compared with standard methods of beam characteristics applied to the same hazard assessments. Approaches for non specular and non-Lambertian diffuse hazards (NHZx) will also be discussed.

Technical PAS Session 13: Are These Lasers Dangerous – What Are the Expected Effects of Different Lasers?

Thursday, March 17 • 10:20am
Session Chair: Leon McLin, AFRL/HED, Brooks City-Base, TX, USA

Lasers have a large range of uses, from class room pointers and laser shows to surgical procedures and industrial applications. This session will cover, with examples, the effects of lasers as they vary with laser parameters, e.g. power, pulse width, wavelength. The participants of this seminar will receive information to better understand these topics:
- Laser injury and the energy needed to cause minimum visible lesions, retinal hemorrhage, scotomas and reduction in visual acuity
- Symptoms and signs of laser injury. Some specific accident cases will be reviewed
- Glare and flashblindness, and the use of lasers for non-lethal warning and vision suppression
- Therapeutic ophthalmic uses of lasers
- Unwanted effects and dangers of lasers

Special Thanks to the Program Committee

Tom Lieb, L’A’I International, Elk Grove, CA, USA
Jay Parkinson, Phoenix Laser Safety LLC., Chandler, AZ, USA
Bob Thomas, US Air Force Research Lab, Brooks City-Base, TX, USA
Jeff Pflouz, US Army Public Health Command, Gunpowder, MD, USA
Medical Laser Safety Officer Course

Course Overview
This course is designed to give operating room personnel a basic foundation in laser biophysics, tissue interaction and laser safety. Laser safety protocols will be addressed according to the ANSI Z136.3 Safe Use of Lasers in Health Care Facilities standard, AORN recommended practices, and ASLMS practices. Instruction is accomplished through didactics and discussions. This course is worth 9.95 Contact Hours, and 1.5 BLS CM Points.

Who Should Attend
This course is for RNs, Supervisors, Surgical Techs, Training Coordinators or anyone who has been assigned the duties and responsibilities of an LSO in a medical facility.

Course Objectives
• Discuss laser biophysics and tissue interactions
• Discuss the laser safety standards according to ANSI
• List the effects and characteristics of laser wavelengths on tissue
• Discuss the current treatment modalities with lasers
• List the indications for specific patient selection when utilizing the different laser wavelengths
• Explain the operational skills with the different laser delivery devices
• List the advantages of the laser

Contact Hours
Contact hours are provided by the Laser Institute of America, provider approved by the California Board of Registered Nursing, Provider Number CEP 14801, for 9.95 contact hours.

Included in MLSO Course Registration Fees
All attendees will receive a course manual including a resource CD with useful LSO documentation forms, ANSI Z136.3 Safe Use of Lasers in Health Care Facilities standard, LIA Guide for Selection of Laser Eye Protection, and a certificate of completion.

MLSO Course Registration Fees
Regular Price: LIA Member = $595
Non-member = $695

Course Times
Saturday, March 12, 2011
8:00 AM – 5:00 PM
Sunday, March 13, 2011
8:00 AM – 12:00 PM

MLSO Course Registration Form

Please Print ❑ Prof. ❑ Dr. ❑ Mr. ❑ Mrs. ❑ Ms.

First Name MI Last Name

Title / Position Company

Address (include Mail Stop) City State Zip / Postal Code

Phone Fax E-Mail

❑ Purchase Order ❑ Check ❑ Money Order ❑ AMEX ❑ Visa ❑ Mastercard

Card or Purchase Order Number Expiration Date

PRICING:
LIA Member: $595 Non-Member: $695

Authorized Signature Print Signature

Send to: Laser Institute of America • 13501 Ingenuity Drive, Suite 128 • Orlando, FL 32826
Phone: 1800.345.2737 or 407.380.1553 • Fax: 407.380.5588
Hotel Accommodations:

Doubletree Hotel San Jose
2050 Gateway Place
San Jose, CA 95110
Phone: +1.408.453.4000
Fax: +1.408.437.2898
http://doubletree1.hilton.com

Surrounded by the Santa Cruz Mountains to the west and the foothills of San Jose to the east, the Doubletree Hotel San Jose boasts a location vibrant with beauty and rich with culture, history and diversity. Take a dip in the heated swimming pool, work out in the fitness center or take some time out in the whirlpool spa. Enjoy the superb dining experiences at the many onsite restaurants or the various establishments nearby within walking distance.

Rental Car Information:

Avis Rental Car® - Call Avis Rental Car 800.331.1600 and mention AVIS worldwide discount number J093783 or to reserve online go to www.avis.com.

Airport Transportation Information:

✈ San Jose International Airport
- Distance from hotel: 0.5 miles
- Drive time: 5 minutes

Directions: Follow signs for Hwy 101N/Airport Pkwy and stay in the right lane. Turn right onto Airport Pkwy out of the airport and continue east. At the first light, turn left onto Gateway Place Hotel will be on the right.

Transportation to and from the airport
Type of transportation Typical minimum charge:
Courtesy Bus: Call from courtesy phone
Taxi: 10.00 USD

✈ San Francisco International Airport
- Distance from hotel: 35 miles
- Drive time: 40 minutes

Directions: Take Hwy 101 Southbound for approximately 33 miles to the 1st St/Brokaw Rd exit. Make a right at the first stoplight onto Airport Pkwy and then turn right into hotel parking lot.

Transportation to and from the airport
Type of transportation Typical minimum charge:
Bus Service: 5.00 USD
Super Shuttle: 35.00 USD
Subway/Rail: 8.00 USD
Taxi: 100.00 USD

✈ Metropolitan Oakland International Airport
- Distance from hotel: 30 miles
- Drive time: 40 minutes

Directions: Take Hwy 880 South to the Brokaw Rd exit. Turn right onto Brokaw and continue for ½ (one half) miles. Hotel is on the right.

Transportation to and from the airport
Type of transportation Typical minimum charge:
Bus Service: 8.00 USD
Super Shuttle: 40.00 USD

Average March Temperature:
High: 67º F / 19º C
Low: 46º F / 8º C
CONFERENCE REGISTRATION FORM

PLEASE PRINT OR TYPE
- Prof.
- Dr.
- Mr.
- Mrs.
- Ms.
- Miss

First Name/M.I./Last Name (Surname) ____________________________________________

Company Affiliation __________________________________________________________

Dept./Bldg./Mail Stop/etc. ______________________________________________________

Street Address or P.O. Box ________________________________ City/State/Zip (Postal) Code ________ Country __________

Telephone (Work)________________________ Fax _______________________________

E-mail ________________________________________________________________

Emergency Contact: Name __________________________ Phone ______________________

Will you attend the Practical Applications Seminar?
- Yes
- No
- Not Sure

Please check here if you have any special needs and LIA will contact you.

A. Full Registration (any combination of Laser Safety Scientific Sessions & Practical Applications Seminar)

Include admission to the Plenary Session, Technical sessions, Workshops, Awards Luncheon, Meet & Greet Reception, Sponsor Program Reception, Hot Topics Luncheon and Conference Proceedings.

Check member status:  
- Member of 
  - LIA
  - AIHA
  - AST
  - BLS
  - ILDA

Membership # __________________________

Payment Postmarked or Received by January 20
- Member ............... $645
- Cooperating Society ....... $645
- Non-Member ............ $695
- Student* ................ $385

Payment Postmarked or Received January 21 - February 17
- Member ............... $690
- Cooperating Society ....... $690
- Non-Member ............ $740
- Student* ................ $410

*Please note: Registration cannot be completed without a copy of your valid Student ID. Student price is not available onsite.

After February 18 and Onsite: Registration fee $735 member, $785 non-member

B. One Day / Two Day Registration (Laser Safety Scientific Sessions or Practical Applications Seminar)

Include admission to the Technical sessions, Workshops, Receptions / Luncheon on that day only, and Conference Proceedings.

Practical Applications Seminar is Monday & Tuesday.

Check member status:  
- Member of 
  - LIA
  - AIHA
  - AST
  - BLS
  - ILDA

Membership # __________________________

Date of Attendance:  
- Mon. Mar. 14
- Tue. Mar. 15
- Wed. Mar. 16
- Thur. Mar. 17

Payment Postmarked or Received by January 20
- Member $195 x ______ (# of days) = $_____
- Cooperating Society $645 x ______ (# of days) = $_____
- Non-Member $225 x ______ (# of days) = $_____
- Student* $385 x ______ (# of days) = $_____

Payment Postmarked or Received January 21 - February 17
- Member $215 x ______ (# of days) = $_____
- Cooperating Society $690 x ______ (# of days) = $_____
- Non-Member $245 x ______ (# of days) = $_____
- Student* $410 x ______ (# of days) = $_____

After February 18 and Onsite: Registration fee $250 member, $280 non-member

C. Guest Tickets

Spouse/Guest Package Ticket(s) Includes: Welcome Reception, Awards Luncheon, Sponsor Program Reception, AM/PM Breaks, and Hot Topics Luncheon

(Please provide name of guest for nametag purposes)

- $95 x ______ (# of guests) = $_____

Name of guest(s) ____________________________

D. Method of Payment

Payment must accompany registration form to be processed. Confirmation e-mail will be sent within two weeks of receipt.

(Include registrant’s name and ILSC on check.)

- VISA
- Mastercard
- AMEX

Check or Money Order enclosed, Payable to LIA in U.S. Funds, Drawn on a U.S. Bank

Credit Card No. ____________________________ Exp. Date ____________ Card Security Code: __________

Name on Card ____________________________ Authorized Signature ____________________________

Grand Total: ____________

*The card security code (CSC) is a 3- or 4-digit number (not part of the credit card number) that appears on the back of VISA and MasterCard & the front of American Express credit cards. Payment cannot be processed without CSC code.

Refund policy: No refunds will be made on cancellations received after February 18. All requests for refunds must be made in writing. There will be a $75.00 processing fee for all refunds. Guest tickets are nonrefundable.
The World's Leading Conference on Laser Safety

INTERNATIONAL LASER SAFETY CONFERENCE

March 14 - 17, 2011
Doubletree Hotel San Jose • San Jose, CA, USA

CONFERENCE GENERAL CHAIR: BENJAMIN ROCKWELL, Ph.D,
Air Force Research Laboratory, Brooks City-Base, Texas, USA

LASER SAFETY SCIENTIFIC SESSIONS (LSSS) CHAIR: JOHN O’HAGAN, Ph.D,
Health Protection Agency, Didcot, Great Britain

MEDICAL PRACTICAL APPLICATIONS SEMINAR (PAS) CHAIR: VANGIE DENNIS, RN, CNOR, CMLS,
Gwinnett Medical Center, Duluth, Georgia, USA

TECHNICAL PRACTICAL APPLICATIONS SEMINAR (PAS) CHAIR: SHELDON ZIMMERMAN, CLSO,
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