Volume 33 Issue 1 2025

THE OFFICIAL NEWSLETTER OF LIA

On the Cover: Entertainment Focus –

Kylie Minogue's Tour

Also in this Issue: - 2025 ILSC Recap - Market Updates



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LIA TODAY is published quarterly to educate and inform students and professionals of challenges and innovations in the field of photonic materials processing. ISSN 2690-5981



Diamonds are a Girl's Best Friend– ER Productions Newest Lasers Shining Bright for Kylie Minogue

As part of a recurring quarterly feature, ER Productions highlights one of the various aspects of display laser use in the entertainment industry. In this edition, they dive into ER Productions newest Kinekt Micro laser model that is being used for Australian singer Kylie Minogue to bring her world tour to life.



A Recap of the 2025 International Laser Safety Conference

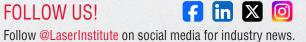
The Laser Institute's John McCormack reflects on this year's Industrial Laser Safety Conference, located at the DoubleTree at Universal in Orlando, held on March 3-5. The conference covers all aspects of laser safety practice and hazard control.

Special Thanks to our Editorial Committee

Martin Barraclough - ER Productions Dr. Youngfeng Lu - University of Nebraska - Lincoln Dr. David Sliney

LIA Staff Editors

Jana Langhans; John McCormack



The acceptance and publication of manuscripts and other types of articles in *LIA TODAY* does not imply that the reviewers, editors, or publisher accept, approve, or endorse the data, opinions, and conclusions of the authors.



LIA 2025 PRESIDENT

A. Kar

On behalf of the LIA membership, I would like to thank Gilbert Haas who has served LIA in many capacities over the years – assuming the role of interim Executive Director after the retirement of our previous Executive Director Dr. Nathaniel Quick. I also appreciate the Officers' assistance and hard work in conducting an extensive search for an Executive Director with Shaun Oleson assuming the role on January 1st, 2025. Shaun has been with LIA for many years, and I believe that his experience and dedication will benefit LIA tremendously, creating a platform for the organization's growth. Special thanks are due the staff for implementing new policies to modernize LIA and meet its goals. I also want to welcome the returning officers and new members of the Board of Trustees. Your collective expertise and vision are pivotal to our continued success.

Regarding laser technology and applications, innovative laser-assisted manufacturing is going to make a greater impact in the coming years. The field of laser applications is broadening – including hand-held lasers, entertainment, communication, health care, aerospace, automotive and microelectronics – which opens new opportunities for business in laser industries. Current geo-political assessment on tariffs would also impact laser industries in many countries, particularly in the USA where manufacturing plants are expected to be built. Laser safety and hand-held lasers are gaining traction in numerous applications beyond the typical factory floors. These types of lasers with added safety features would attract new investments, boost business in laser industries, and create employment. Modification of material properties and new manufacturing approaches enabled by laser technologies can catalyze substantial economic growth.

Overall, the future of LIA is bright. We just completed a very successful International Laser Safety Conference (ILSC) in March 2025 and preparations are well underway for the 44th annual ICALEO in Orlando, FL, from October 13-16, 2025. We encourage you to join us this year in Orlando. Both LIA members and non-members' innovative approaches and their continued enthusiasm for presenting their research in different events is a testament to a new world of laser applications.



EXECUTIVE DIRECTOR

I'm grateful, humbled, and privileged to step into the role of Executive Director of The Laser Institute (LIA). I appreciate the gravity of this position and feel deeply enthusiastic about what lies ahead. I'm excited to share my first message with you in this capacity.

Since joining LIA in 2009, I've had the opportunity to serve in various leadership roles, including as General Manager and Chief Technology Officer. That experience has given me a deep understanding of our operations, goals, and community. My background in change management, servant leadership, stakeholder engagement, and strategic development continues to shape my commitment to LIA's mission and future.

As I begin this role, I'm especially mindful of the contributions of my immediate predecessor, Gilbert Haas, who oversaw the organization since 2023, and his predecessor, Dr. Nathaniel Quick, whose recent passing was deeply felt across our community. I've been fortunate to have both Gil and Dr. Quick as mentors. I remain grateful for Gil's continued guidance and for Dr. Quick's lasting impact on our community—as well as for the immeasurable dedication and contributions of so many that have helped shape LIA since 1968.

In the spirit of progress, our recent International Laser Safety Conference (ILSC) exceeded expectations, reflecting the strength and engagement of our safety community. We've also rolled out new membership benefits to better serve our diverse audience—including complimentary advertising in LIA Today for corporate members, exclusive event access for individual members, and a dedicated customer service line for all of our members. The launch of our updated website underscores this momentum, offering a more intuitive and accessible platform for the entire community.

Looking ahead, I'm energized by the opportunity to strengthen existing partnerships and build new ones across industries and regions. In the coming months, LIA plans to participate in several key events, including RAPID+TCT, UCF's CREOL Industrial Affiliates Day and Symposium, SPIE Defense + Commercial Sensing (DCS), and Laser World of Photonics. These engagements reflect our commitment to connecting with the broader optics and photonics community and expanding our reach globally.

As we move forward, I encourage you to stay engaged—share feedback, participate in elections, nominate peers for awards or Fellow recognition, and help identify thoughtful, committed individuals for our next class of trustees. Together, we can continue to advance LIA's mission and broaden our global impact. Thank you for being an essential part of our community.

MESSAGES FROM THE LIA



A LOOK AHEAD AT UPCOMING LASER SAFETY TRAINING!

LIA'S NEWEST CORPORATE MEMBERS!

| APRIL | LASER SAFETY OFFICER Reno, NV - April 28-30 | |
|-----------|---|--|
| | LASER SAFETY OFFICER WITH HAZARD ANALYSIS Reno, NV - April 28-May 2 | Recently purchased a new laser? Request an in-house training to ensure your |
| ΜΑΥ | INDUSTRIAL LASER SAFETY OFFICER Novi, MI - May 14-15 | staff knows how to run the system safely and correctly. |
| | CALCULATING LASER SYSTEM HAZARDS Virtual (Zoom) - May 19-23 | <u>LIA COURSE HIGHLIGHT:</u> INDUSTRIAL LASER |
| JUNE | MEDICAL LASER SAFETY OFFICER Virtual (Zoom) - June 11-12 | SAFETY OFFICER |
| AUGUST | CALCULATING LASER SYSTEM HAZARDS Virtual (Zoom) - August 4-8 | MAY 14-15, 2025 NOVI, MICHIGAN Designed to keep you on the leading edge of safety training |
| | INDUSTRIAL LASER SAFETY OFFICER Novi, MI - August 13-14 | requirements and program administration, this course teaches a non-mathematical approach to facilitating the duties |
| SEPTEMBER | MEDICAL LASER SAFETY OFFICER New York City, NY - September 6-7 | of a Laser Safety Officer. Our Industrial LSO course was designed for all levels of |
| | LASER SAFETY OFFICER Niagara Falls, NY- September 29-October 1 | experience involved in industrial, and manufacturing applications of lasers. This course meets |
| | LASER SAFETY OFFICER WITH HAZARD ANALYSIS Niagara Falls, NY- September 29-October 3 | all LSO training requirements outlined by the Z136.9 Safe Use of Lasers in Manufacturing Environments standard and |
| NOVEMBER | LASER SAFETY OFFICER Orlando, FL- November 3-5 | OSHA. This course is worth 16 CECs by AAHP and 2.0 BLS CM points by |
| | LASER SAFETY OFFICER WITH HAZARD ANALYSIS Orlando, FL- November 3-7 | the Board of Laser Safety. |
| | MEDICAL LASER SAFETY OFFICER Virtual (Zoom) - November 8-9 | |
| DECEMBER | CALCULATING LASER SYSTEMS HAZARDS Virtual (Zoom) - December 15-19 | |



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BIAS - Bremer Institut für angewandte Strahltechnik GmbH



MEMBER UPDATES

Welcome New Corporate Members

NEW LIA MEMBERS

Innovative Laser Safety

To find out more about becoming a corporate member, email membership@lia.org or visit lia.org/membership/corporate.

Already an LIA member? Ask about joining our Facebook group!



A LOOK AHEAD AT UPCOMING INDUSTRY CONFERENCES!

- 1. Photonics West Jan 27-29, 2025 (San Francisco, CA, USA)
- 2. ILSC March 3-6, 2025 (Orlando, FL, USA)
- 3. ILAS March 26-27, 2025 (Kenilworth, UK)
- 4. AORN Apr 5-8, 2025 (Boston, MA, USA)
- 5. RAPID + TCT April 8-10, 2025 (Detroit, MI, USA)
- 6. SPIE DCS Apr 13-17, 2025 (Orlando, FL, USA)
- 7. ASLMS Apr 24-25, 2025 (Orlando, FL, USA)
- 8. CLEO May 4-9, 2025 (Long Beach, CA, USA)
- 9. LAMP June 10-13, 2025 (Ise-city, Mie-prefecture, Japan)
- 10. Laser World of Photonics June 23-27, 2025 (Munich, Germany)
 - LIM June 23-26, 2025 (Munich, Germany)
- 11. ASSP July 22-24, 2025 (Orlando, FL, USA)
- 12. FABTECH Sept 8-11, 2025 (Chicago, IL, USA)
- 13. ICALEO Oct 13-16, 2025 (Orlando, FL, USA)
- 14. OR Managers Oct 28-30, 2025 (Las Vegas, NV, USA)







See you in 2027! **ILSC** Updates

Thank you to everyone who joined us for this year's International Laser Safety Conference in Orlando, Florida!

Be sure to subscribe to our mailing list at ilsc.ngo to be the first to know when ILSC 2027 is announced! If you are interested in participating in the organizing committee, please reach out to the ILSC Conference Team by emailing ilsc@lia.org.



ICALEO Updates

APPLICATIONS OF LASERS & ELECTRO-OPTICS The 44th annual International Congress on Applications of Lasers and Electro-Optics (ICALEO) will be returning to Orlando, Florida! We are excited to host you at the beautiful Caribe Royale on October 13-16, 2025.

Call for Papers and Posters: Submit your abstract by April 11th for the chance to participate in this year's conference as a speaker or poster presenter.

Early Bird Sponsorships: Don't miss out on early bird savings on sponsorships and exhibit space! Contact marketing@lia.org or visit icaleo.org for more information.

Early Bird Registration: Registration will be opening soon!

Subscribe to our mailing list at icaleo.org/subscribe for the latest updates.

LIA's Upcoming Webinars

Networking IRL (In Real Life) Date: TBD

Make the most of conferences and professional events with networking tips from laser industry experts Eliana Fu (TRUMPF) and Neil Ball (Directed Light). In this webinar, the chairs of LAM 2024 share their insights into making professional connections in real life as you grow your career. Whether you are a new professional or simply seeking advice on growing your career in the laser industry, this 30-minute webinar is for you.

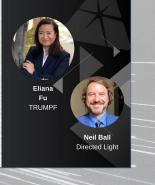
Don't miss this webinar by subscribing at lia.org/webinars

LIA TODAY VOL. 33 NO. 1 QUARTER 1 2025

EVENT UPDATES

A LOOK AHEAD AT LIA'S INDUSTRY CONFERENCES!

October 13-16, 2025 - Orlando, Florida





CREOL, The College of **Optics and Photonics**



STUDENT SPOTLIGHT

Name: Gabryella Baldaci Hometown/State: Cuiabá, Mato Grosso (Brazil) Year in School: Class of 2025 Area of Study/Major: Photonic Science and Engineering

When were you first introduced to photonics/electro-optics?

 $^{
m QQ}$ During my first engineering class at Valencia College, Mike McKee gave a presentation on the field of optics and photonics, and I immediately fell in love with the subject. He explained the importance of current light-based technologies and their future impact on society. After attending an open-house event at CREOL, I decided to switch majors and pursue a degree in Photonic Science and Engineering. QQ

What or who inspired you to choose your line of study?

 $^{\it QQ}$ I have always dreamed of making a positive impact on my community, and I saw a chance of doing so through this field. When Mike McKee shared how revolutionary light-based technologies are and how they will shape our future, I knew I wanted to contribute to that future.go

Describe your favorite course that you took at UCF.

 $^{
m QQ}$ My favorite course was Imaging and Display taught by Dr. Bahaa E. A. Saleh. With every lecture, I felt like I was connecting puzzle pieces. The course brought together concepts from other classes, such as Matrix and Linear Algebra, Signal Processing, and previous Physics courses. It was also an incredible honor to have him as a professor. _{QQ}

Are you researching anything at the moment? Can you tell us about it?

 \mathcal{R} My most recent research focused on laser surface treatment of metal alloys and their applications. Q_0

What would you like to do in the future with your studies?

 \mathcal{C} I am excited to take what I have learned during my time at CREOL and apply it in the industry. I am particularly interested in continuing working in laser manufacturing, exploring laser processes for new developments, and expanding my skills with real-world challenges while staying engaged with advancements in the field.

Additionally, I want to get involved in outreach events and promote awareness of light-based technologies. 90

INTRODUCING LIA'S 2025 BOARD OF TRUSTEES

The Laser Institute (LIA), a global leader in laser safety, training, and industry advancement, is proud to announce the 2025 Board of Officers and Trustees, including election of three new Trustees to its Board. This year's leadership committee brings diverse and complementary expertise that aligns with LIA's ongoing commitment to innovation, education, and safety in the laser industry.

2025 OFFICERS





Past President Dr. Henrikki Pantsar TRUMPF

President Prof. Aravinda Kar University of Central Florida; CREOL

Hyperion

2025-2027 TRUSTEES

David Bothner NoIR Laser Technologies

Jamie King Lawrence Livermore National Laboratory

Michael Lander Skyward LTD

Prof. Yongfeng Lu University of Nebraska - Lincoln

Eric Mottay h-nu

Email membership@lia.org to find out more about FREE student memberships!



Vice President Dr. Sam Salama Technologies



Secretary Klaus Loffler Precitec, Inc.



Treasurer Dr. Bo Gu **BOS** Photonics

Dr. Aiko Narazaki

National Institute of Advanced Industrial Science and Technology (AIST)

Dr. Alexander Olowinsky Fraunhofer Institute for Laser Technology ILT

Dr. Koji Sugioka RIKEN

Prof. Antti Salminen

University of Turku

Laser Safety Matters Create a Secure Workspace Today!

Ensure Compliance, Protect Your Team

Operating in a laser environment? Make sure you're fully compliant with ANSI Z136.1 standards. Non-compliance can lead to safety hazards, fines, and costly downtime.

At Kentek, we offer expert laser safety audits and consulting services to help you navigate the complex regulatory landscape. Our team will ensure your facilities, equipment, and procedures meet the highest standards for laser safety, protecting both your team and your reputation.

Let us help you stay ahead of safety regulations and mitigate risk in your laser environment. Trust Kentek to deliver accurate assessments and practical solutions tailored to your unique needs.

| LASER EYE PROTECTION | AREA CONTROL & WARNING | LASER BARRIERS & CURTAINS |
|---|---|---|
| Multiwave, Poly, Glass Spectacles, goggles, face shield, Patient Protection, Combo IPL, X-ray & Rx | Safety Interlock System Automated Sign Control Manual Sign Control Safety Signs & Labels | Portable Barriers Permanent Area Barriers Temporary Area Barriers Optical Table Barriers |
| LASER SAFETY U | LASER WINDOWS & BARRIERS | BEAM EVALUATION |
| Laser Safety Consulting | | Laser Beam Measurement |
| LSO Training | Window Shades | Beam Dumps & Targets |
| Laser Safety Audits | Window Blocks | Thermal Alignment Paper |
| Hazard Analysis Software | Laser Viewing Windows | Handheld Detectors & |

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Cameras

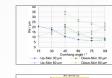
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2024 MOST DOWNLOADED RESEARCH

Totaling over 98,000 downloads, the following articles recently published in 2024 are some of the most downloaded articles of the year in the Journal of Laser Applications (JLA). These outstanding publications highlight some of the year's most impactful research in the field. Thank you to all the authors, reviewers, and editors who contribute to our continued success!

Free to LIA Members!

Visit JLA Online: https://lia.scitation.org/journal/jla



6 kN aerospike breadboard engine Alex Selbmann, Samira Gruber, Martin Propst, Tim Dorau, et al. 15.096 downloads



L303, 16 pm Membran H3 pm L303, 16 pm

analysis for quality monitoring Johannes Heilmeier, Michael K. Kick, Sophie Grabmann, Tatek Muschol, et al.

14,580 downloads

laser structuring of the diffusion media for fuel cells Christian Geiger, Sophie Grabmann, Tony Weiss, Alena Gruendl, et al.

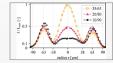
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Pourya Heidari Orojloo, Ali Gökhan Demir 10.752 downloads

Annika Bohlen, Thomas Seefeld 9.864 downloads

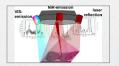


S. Sadanand, M. Rodríguez-Sánchez, A. Ghavimi, R. Busch, et al. 7,932 downloads



Alexander Bauch, Philipp Kohlwes, Ingomar Kelbassa 7,752 downloads

feeding using optical coherence tomography Christian Bernauer, Sebastian Thiem, Pawel Garkusha, Christian Geiger, et al. 6,552 downloads



Milena Žurić. Goomaral Sukhbold 5,616 downloads

Community Driven

As the scientific platform of The Laser Institute, JLA provides authors with more than just published work; it introduces authors to a community of experts.

Submit an Article

Process qualification, additive manufacturing, and postprocessing of a hydrogen peroxide/kerosene

Inline failure detection in laser beam welding of battery cells: Acoustic and spectral emission

Influence of the material properties and the process parameters on the ablation behavior for the

Study of burst mode for enhancing the ps-laser cutting performance of lithium-ion battery electrodes

Adaptive powder nozzle setup for enhanced efficiency in laser metal deposition

Experimental investigation of process parameter variations on the microstructure and failure

behavior of IN718 structures in PBF-LB/M Hannes Panzer, Johannes Diller, Fabian Ehrenfels, Jonathan Brandt, et al.

Laser powder bed fusion of a nanocrystalline Finemet Fe-based alloy for soft magnetic applications

Laser powder bed fusion of pure copper using ring-shaped beam profiles

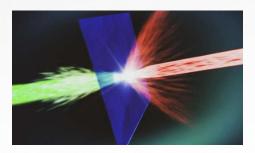
Real-time monitoring and control of the layer height in laser metal deposition with coaxial wire

Real-time analysis of inline sensor data during USP-laser machining





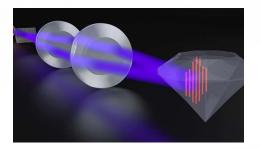
TAKE A LOOK AT THE TOP 4 ARTICLES ON LIA'S SOCIAL MEDIA!



INNOVATIVE TARGET DESIGN LEADS TO SURPRISING DISCOVERY IN LASER-PLASMA ACCELERATION

Scientists have developed a method for generating fast, bright proton beams using a high-repetition-rate laser-plasma accelerator.

Read more



DEEP-ULTRAVIOLET LASER MICROSCOPE REVEALS DIAMOND'S NANOSCALE TRANSPORT BEHAVIORS

A research team has introduced a tabletop deep-ultraviolet (DUV) laser that can excite and probe nanoscale transport behaviors in materials such as diamond, making examining these materials possible on an unprecedented scale.

Read more

LASER SAFETY GUIDE THIRTEENTH EDITION

A tool for all laser personnel - outlining potential hazards for all types of lasers and providing easy to understand guidelines for controlling laser hazards.

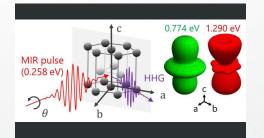
www.lia.org/store/laser-safety-guide



RESEARCHERS PRODUCE ELLIPTICALLY POLARIZED INCANDESCENT LIGHT

A team of researchers from the University of Michigan have demonstrated for the first time that a twisted filament could produce twirling light waves.

Read more



LASER TECHNIQUE UNCOVERS HOW TITANIUM'S ELECTRON BEHAVIOR INFLUENCES ITS PHYSICAL PROPERTIES

A research team has developed a way to study how the orientation and behavior of electrons in titanium influence its physical characteristics, which could lead to more advanced and efficient titanium alloys.

Read more



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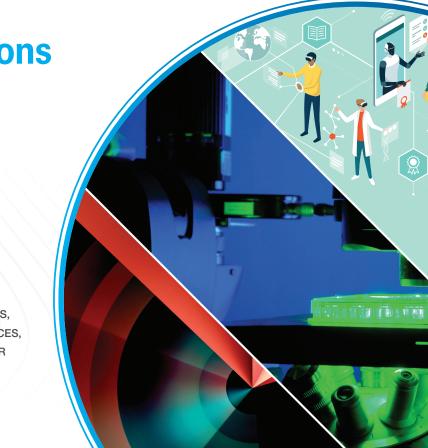
WORLDWIDE COVERAGE OF

LASERS, OPTICS, POSITIONING, SENSORS & DETECTORS, IMAGING, TEST & MEASUREMENT, SOLAR, LIGHT SOURCES, MICROSCOPY, MACHINE VISION, SPECTROSCOPY, FIBER OPTICS, MATERIALS & COATINGS



Laser Safety Guide

Newly updated to incorporate the major changes from the recently revised ANSI Z136.1 *Safe Use of Lasers* standard!



DIAMONDS ARE A GIRL'S BEST FRIEND- ER PRODUCTIONS NEWEST LASERS SHINING BRIGHT FOR KYLIE MINOGUE

As part of a recurring quarterly feature, ER Productions highlights one of the various aspects of display laser use in the entertainment industry. In this edition, they dive into ER Productions newest Kinekt Micro laser model that is being used for Australian singer Kylie Minoque to bring her world tour to life.

This guarter, we are highlighting the show-stopping centerpiece for Kylie Minoque's latest tour an ethereal laser sculpture that turns every venue into a shimmering crystal vault. When her creative team reached out to ER Productions, they wanted something truly iconic. And what would be a better way than to break out our brand-new Kinekt Micro laser.

The idea was to construct a laser "cage" that envelops Kylie in a sharply angled, ultra-clean array of beams, forming a blue-white



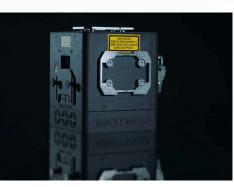
The ER Productions 8 Kinekt Micro lasers form the top of the diamond. closing it with an AT-100 laser on the floor.

crystal silhouette around her as she performs. From the moment she rises onto the stage, perched on a central platform, the laser diamond begins to take shape, surrounding her in light and refracting energy through the crowd

To realize this look, we deployed eight Kinekt Micro lasers to form the top half of the diamond. The Kinekt Micro is our most compact laser to date, weighing in at just 1.6kg. This laser is a result of hundreds of hours of meticulous research and development. Its small size allows for precision placement in even the tightest rigging setups, while still delivering sharp, high-intensity output. It features an integrated Pangolin FB4 controller and a Compact506 scan system, with modular Kinekt mounting brackets that make it incredibly versatile for rigging applications. The Kinekt Micro is powered via a Neutrik 8+2 XLR connector, delivering power, network data, and E-Stop signal to the unit through a single cable. This

streamlines the setup while maintaining maximum safety and reliability.

Designed with touring in mind, the Kinekt Micro combines tight beam divergence, seamless control, and safety features that ensure compliance with international regulations-even under challenging show conditions. For the bottom tip of the diamond, we brought in an AT-100 from our Atolla range, known for its raw power and stable beam integrity.



A close up look at the Kinekt Micro laser svstem.

This combination of precision and power helped create the multidimensional laser "cut" effect, anchoring the look and giving it real depth.

Kylie Minoque's Tension Tour, which began on February 15, 2025, in Perth, Australia, has captivated audiences worldwide with its innovative stage designs and dynamic performances. Following the Australian leg, the tour expanded to Asia, Europe, and Latin America. In North America, the tour includes stops in major cities across the United States and Canada. The tour is set to conclude on August 26, 2025, in Monterrey, Mexico, totaling 70 shows. ER Productions has been instrumental in delivering the tour's signature laser visuals, ensuring that the laser diamond effect continues to dazzle audiences at each venue.

But gear alone doesn't make magic. The artistry and technical execution came down to the incredible ER team behind the scenes. Our Special Effects Lead Alfie Broad collaborated with Laser Lead Tommy Sheen



Also provided for the Kylie Minogue Tension Tour were 24x BB4, 10x AT-30, 6x Stadium Shot MKIII, 6x Stadium Blaser, 4x Swirl Fan MKII, 6x Viper Deluxe V2, 2x Unique Hazer as well as streamers and multicoloured slowfall confetti

and SFX Technician Samuel Wakerley to translate a creative concept into a physical reality. Our technicians are talented at combining show design, rigging finesse, and a deep understanding of safety protocols to deliver something spectacular, safely, night after night.

iosh

Approved training provider 5021

systems.

May 14th and 15th, 2025

As an IOSH approved training provider, our Safe Working With Display Lasers course is the first of its kind, developed to deliver hands-on practical sessions by industry experts and taught over 2 days. Built for the international market, it meets all the requirements for Laser Safety Operators in the US & UK, as well as meeting the training standards of ANSI & EN60825.

As the tour progresses on the US leg in the coming months. the laser diamond continues to shine. Just like Kylie herself, the visuals for her show are elegant, bold, and unforgettable. Our technicians were not only able to capture the glamour of her performance, but the developing technology that ER Productions has been producing since our founding. We are proud to have been involved with this project and can't wait to shine brighter in the future with our Kinekt Micro laser and advanced networking



About the Author

ER Productions is an international, award-winning laser and special effects specialist with an extensive portfolio spanning high-profile events, advertising campaigns, television productions, and world tours. With offices in Dartford, Lancaster, Las Vegas, Ibiza, Sydney, and Riyadh, ER Productions continues to lead the industry in innovation, safety, and cutting-edge visual experiences.



SAFE WORKING WITH DISPLAY LASERS **TRAINING COURSE**

LAS VEGAS DATES:

To sign up go to er-productions.com/safe-working-with-display-lasers

LASER SAFETY CONFERENCE

The Laser Institute's John McCormack reflects on this year's Industrial Laser Safety Conference, located at the DoubleTree at Universal in Orlando, held on March 3-5. The conference covers all aspects of laser safety practice and hazard control.

2025 marked the return of the biennial International Laser Safety Conference (ILSC), the world's leading conference on laser safety. This year's event was held March 3-5, 2025, at the DoubleTree by Hilton at the Entrance of Universal in Orlando, Florida and welcomed over 200 laser safety professionals to the beautiful Sunshine State.

Z136 Meetings and Other Subcommittee Meetings

We unofficially kicked things off this year with the Z136 Standards Development Committee (SDC) annual meeting which featured updates from subcommittee chairs detailing the work done in the past year on the Z136 series of laser safety standards. Updates were given by the Z136 Administrative Committee (AdCom), 10 subcommittee chairs, and 5 technical subcommittee chairs and showcased all the work being done in Z136 standards development. Z136 SDC chair. Sheldon Zimmerman led the annual meeting and thanked attendees for their continued work and dedication.

Getting people together for inperson meetings is never an easy feat and ILSC provides the perfect opportunity for those involved in standards development that are spread across the globe to come together for a few days to discuss the current state of their respective standards. We were so happy to provide meeting space for 17 subcommittee meetings throughout the week. The Z136 saw its SSC-3, SSC-4, SSC-6, SSC-8, SSC-9, SSC-10,

and TSC-4 hold very productive meetings. Other subcommittees like IEC TC-76 WG 1, 7, & 8, DOE EFCOG, and LSO for Laser Shows Harmonization also coordinated meetings and gathered up their committees for thoughtful discussions.

Welcome Reception

At the adjournment of the Z136 Annual Meeting we started the ILSC Welcome Reception on Sunday evening before the commencement of the conference on Monday morning. This meet and greet was a great time for attendees to catch up, mingle, grab food and drinks by the fire, and share stories before the official start of the conference.

Opening Plenary

The Opening Plenary commenced in the Universal Ballroom where Conference Chair Jamie King of Lawerence Livermore National Laboratory welcomed two invited speakers. The first plenary speaker, Jay Goodman gave his compelling discussion, "The Sun, Friend or Foe?" to a very engaged crowd. This was followed by a thoughtful Q&A where Jay answered attendee auestions. Our second plenary, Dr. Edward Moses discussed "1960 to Today and Beyond – The Path to Laser Driven Commercial Fusion Energy" which set a beautiful path for the attendees to kick off ILSC.

Whova App

This year saw the introduction of the Whova App, keeping attendees connected throughout

the conference. Participants shared photos, session highlights, and key takeaways, fostering a digital community that extended beyond the event itself.

Technical Program

lamie also took time to acknowledge the Conference Track Chairs for their time and effort in assembling their tracks with timely and relevant discussions that kept attendees engaged all week. The Laser Safety Scientific Session (LSSS) was co-chaired by Dr. Trevor Wheatley and Dr. Ramona Gaza. **Our Medical Practical Applications** Seminar (MPAS) was co-chaired by Patti Owens, Penny Smalley, and Vangie Dennis, and the **Technical Practical Applications** Seminar (TPAS) was co-chaired by Ken Barat and Hayden Johnson. A huge thank you to everyone involved for putting forth such a monumental effort and making this year's ILSC one for the books.

This year saw a wide range of

topics run throughout the three tracks and attendees enjoyed discussions on: Use of AI in Safety Management, Incoherent Light Sources, Surgical Plume, Hand-Held Laser Devices, LiDAR, and Incident Investigation, and so many more.

Awards Luncheon

The ILSC 2025 Awards Luncheon recognized top professionals and organizations in laser safety. This year's R. James Rockwell Award Recipient was Patti Owens who was conferred the award for her outstanding contributions to laser safety education.

The George M. Wilkening Award in Laser Safety went to John O'Hagan. who was conferred the award for his outstanding contributions to laser bioeffects research, development of human exposure limits and safety standards, and to applied laser safety.

The BLS Illumination Award which recognizes an institution, company, or organization that directly employs a certified laser safety officer and provides encouragement and support for employee participation within the laser safety community and/or has made outstanding contributions to the field of laser safety was given to the University of Texas Austin with R. DeWayne Holcomb accepting the award.

Sponsor Reception

During the Sponsor Reception, attendees gathered to network, speak with vendors about their products, and make valuable business connections that will hopefully create collaboration in the laser safety space. A big thank you to this year's sponsors: RLI, KenTek, NoIR LaserShields, Agiliti, Laser Safety Systems, Lasermet, Laservision, Lighting Systems Design, Inc., SAIC, and UL Solutions for making this year unforgettable.

Karaoke Night, Closing Plenary & Ice Cream Farewell

We ended this year strong starting on Wednesday Night with a starstudded karaoke night where attendees got to belt their favorite tunes in the Universal Ballroom. We heard songs from every genre and generation, and it was a great time with pizza, drinks, and smiles all around. This led us into our final day where Closing Plenary, Dr. David Stoudt from Booz Allen Hamilton, Inc gave his presentation: "Transitioning Laser Directed Energy Weapons from the Laboratory to the Warfighter" which led to final discussions and goodbyes during our Ice Cream Farewell.

We wouldn't have ILSC without any of our attendees and we look forward to seeing you all in 2027. For the more information please visit ILSC.ngo or email ILSC@lia.org!

The World's Leading Conference ^{on} Laser Safety





THANK YOU TO OUR 2025 ORGANIZING COMMITTEE

Conference General Chair

Jamie King, Lawrence Livermore National Laboratory

Medical Practical Applications Seminar Co-chairs

Penny Smalley, Nurse Consultant Vangie Dennis, Perioperative Consulting Patti Owens, AestheticMed Consulting International

Laser Safety Scientific Sessions

Co-chairs Trevor Wheatley, Opticum Laser Safety Ramona Gaza, NASA

Technical Practical Applications Seminar Co-chairs

Ken Barat, Laser Safety Advisor Hayden Johnson, Lawrence Livermore National Laboratory

ILSC® 2025 International Advisory Board

Josh Hadler, NIST, USA Neil Haigh, Blueside Photonics Ltd, UK Scott Wohlstein, The Photonics Group, USA Nick Hopps, AWE Aldermaston, UK

Ramona Gaza, NASA, USA

Annie Mercier, Université Laval, Canada

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NEW YEAR, NEW BENEFITS - LIA'S UPDATED MEMBERSHIP BENEFITS

LIA's Membership Team has updated the corporate membership structure. Take a look at how the new structure is here to empower businesses, shape the future, and equip you with the best resources to thrive in the laser industry.

At LIA, we're committed to continuously enhancing the corporate membership experience. LIA was formed in 1968 by people who represented the heart of the profession—a group of academic scientists, developers, and engineers who were truly passionate about taking an emerging new laser technology and turning it into a viable industry, and it is our mission to continue this effort and foster collaboration as the premier professional society for the advancement and safe use of lasers and photonics.

We have been working hard to introduce a new membership structure with enhanced benefits to empower your business to thrive in the laser industry. Discover the value of becoming part of a community that not only equips you with the best resources but also connects you with leaders driving industry advancements.

WHAT'S NEW?

Updated Structure

Corporate Membership now includes an updated set of tiers, ranging from Bronze to Ambassador, as well as an option for Institutional. Each tier unlocks increasing value and exclusive opportunities, ensuring that as your organization grows, so do your benefits.

A new feature in this updated structure is that each tier of membership receives a number of one-year individual memberships for companies to assign to

their staff. Employees gain access to unbeatable member pricing on laser safety training. standards, and conferences. as well as valuable resources like the Journal of Laser Applications (JLA) and conference proceedings, ensuring your team stays informed and skilled in the latest industry advancements.



Enhanced Benefits

LIA is excited to introduce new benefits designed to offer tools and connections to help your business thrive. Whether it's increased visibility, talent acquisition, or specialized training, our latest membership enhancements are designed to meet your unique needs and help your company achieve greater success.

Industry-Related Press Releases

Leverage LIA's social channels to share your latest company news with our global audience of laser professionals

Complimentary Advertisements

Corporate members can now take advantage of free advertising space to amplify your brand's visibility.

Complimentary Job Postings

Expand your workforce with top talent. Our career center attracts traffic from professionals globally across the industry, giving you access to a highly specialized audience.

Dedicated Member-Only Customer Service Line Think of it as a fast-track lane

for our members—skip the queue and receive prompt, personalized service that caters to vour needs.

Along with the introduction of these new benefits, corporate members still have access to the same [benefits] that they received in the old structure, such as discounts on LIA event sponsorships, referrals to our customers, recognition at LIA events, and a listing in our Corporate Member Directory. A full list of benefits can be found at lia.org/membership/corporate

LIA's new and improved corporate membership is not just an investment in the future of your company but in the laser industry as a whole. If you are interested in becoming part of the LIA community, please reach out to membership@lia.org. Together, we'll continue to shape the future of laser technology, one innovation at a time.

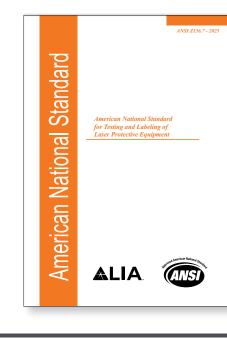




The International Professional Society for Laser Education and Information



ANSI Z136.7 - 2025 Revision American National Standard for Testing and Labeling of Laser Protective Equipment



NEW 2025 Revision will be available this April!

The ANSI Z136.7 for Testing and Labeling of Laser Protective Equipment is intended for anyone selecting or testing laser protective materials. It provides recommendations for testing and labeling laser protective materials and protective equipment.

2025 Updates Include:

- Acronyms
- Ballistic testing







• Testing and considerations: Abrasion testing, Florescence testing,

• Table of symbols for pulse length labeling now includes ANSI / EN / ISO • Testing of high energy laser saturation CW/Q-Switched • Labeling of Ultra-Short and Super Continuum

Find a full list of the ANSI Z136 series of standards in our store on the lia.org website!





CHINESE LASER TECHNOLOGY IMPACTING THE GLOBAL MARKET

As part of a new quarterly op-ed, Geoff Shannon of Laser Markets, Inc investigates and shares his insights of current market trends and the state of the laser industry. His first feature looks into Chinese-made laser products and their effect on the laser market.

About 6 years ago, I was on a coffee break at Laser Munich with the CTO of Han's Laser where he was lamenting the rise of cheap Chinese competitors that were taking chunks of the laser market, and that moving into value-add areas such as E-mobility, welding and other regions was the plan. While I avoided getting out the world's smallest violin, seeing as Han's was the architect of much lost revenue for western suppliers in China, it was the first comment I'd heard on this.

In the intervening years the Chinese laser industry has been on a tear, growing to be around 50% of the market by revenue for many lasers and equipment – and the unit volumes are staggering. Just picking the hot product du jour of handheld laser welders as a benchmark, unit numbers for rest of world (RoW) are < 10,000, and in China they are >100,000.

However, in the feeding frenzy, there has been a pricing blood bath that has left companies like Han's and other "valueadd" Chinese vendors looking elsewhere for business. First, it was Europe, with fiber lasers for markers, then high-power fiber lasers for flat-bed cutters; then it was flat-bed cutters themselves, and it continues. Next, is North America: while tariffs may have some short-term effect, longterm they are likely just a speed bump.

For laser OEM products, many of the Chinese value-add companies have been in business for decades and have honed the product to be at or very near "western quality" with pricing that is typically 50% or lower than its global competitors. For service and support, competition is perhaps not quite there yet but bringing on distributors and the setting up of service centers is happening.

In certain product areas, the tables are being turned, most notably in the Machine Tool world with ultra-high power fiber lasers for cutting. China has pioneered and developed a market for 20kW+ cutting machines that has spurred a response from western suppliers. In a mini laser-power arms race many now offer 20-30kW systems even though the cutting sweet spot remains around 10kW. The ultra-high power target market includes plasma cutting, and with system prices dropping and powers increasing there were murmurs at the last Fabtech foretelling of the end of plasma cutting!

The laser OEM landscape has and is changing for many lasers, with value-add Chinese laser OEM suppliers offering viable products. Safe havens are based on product complexity and barriers to development, and end market conservatism. Products such as high power/high pulse energy nanosecond (solid state), excimer, picosecond, and both low and high-power femtosecond lasers, fall under this umbrella.

The systems market remains generally safer territory in the

short term as quality and service/ support of Chinese products remain somewhat of a question mark. However, as per the laser OEM business, Chinese vendors are nimble and aggressive, and it would be unwise to think they won't get there – top targets for systems are flat-bed cutters, laser markers, handheld laser welders and additive manufacturing.

Ultimately end users and integrators will get better \$/W value increasing the ROI for laser technology. This in turn will increase growth for the laser industry, something we can all get behind.



About the Author Geoff Shannon, PhD Laser Markets Inc

Over 30 years of laser applications, product and market experience, Currently as Principal of Laser Markets offering marketing consulting services for lasers and laser systems.

Rockwell Laser Industries

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For over 45 years, RLI has served the worldwide laser community:

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To find out more about RLI and what we can do for you, visit us at the ILSC[®] Sponsor Reception on Tuesday.



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Laser Safety Training



Laser Safety Products



The LIA Newsroom is your official source for the latest news, announcements, and updates from The Laser Institute. Stay informed with updates on LIA programs, partnerships, conferences, and educational opportunities.



LIA Announces 2025 Award Recipients for Excellence in Laser Safety and Education



February 3, 2025 - The Laser Institute (LIA) is proud to announce the recipients of two distinguished awards recognizing outstanding contributions to laser safety and education. The George M. Wilkening Award in Laser Safety and the R. James Rockwell, Jr. Educational Achievement Award will be conferred at the International Laser Safety Conference (ILSC) 2025, held in Orlando, Florida, on March 4, 2025.

Read the full release here.



The Laser Institute Announces Newly Elected Trustees for 2025-2027 Term

November 19, 2024 - The Laser Institute (LIA), a global leader in laser safety, training, and industry advancement, is proud to announce the election of three new Trustees to its Board. Dr. Aiko Narazaki, Prof. Antti Salminen, and David Bothner will each serve a threeyear term from January 1, 2025, through December 31, 2027. The election results were officially announced during LIA's Annual Meeting at ICALEO on Wednesday, November 6, 2024.

Read the full release here.



The Laser Institute Appoints Shaun Oleson as Executive Director

November 8, 2024 - The Laser Institute (LIA) has announced the appointment of Shaun Oleson as Executive Director-Designate, set to fully assume responsibilities as Executive Director on January 1, 2025. This strategic leadership transition follows a November 3rd vote by LIA's Board of Trustees. Until January, Oleson will work closely with Interim Executive Director Gil Haas to ensure operational continuity.

Read the full release here.



Dr. Koji Sugioka Honored with LIA's 2024 Arthur L. Schawlow Award for Laser Science and Engineering

October 19, 2024 - The Laser Institute (LIA) is pleased to announce that Dr. Koji Sugioka has been named the 2024 recipient of the prestigious Arthur L. Schawlow Award in Laser Science and Engineering. This honor was conferred at LIA's Award Ceremony held during the International Congress on Applications of Lasers & Electro-Optics (ICALEO) on October 6, 2024, in Hollywood, CA. Dr. Sugioka's groundbreaking contributions to the field of laser micro and nanofabrication have been transformative, advancing laser technology applications across science, medicine, and industry.

Read the full release here.



(April 20, 1949 - February 4, 2025)

Honoring a Visionary Leader in Laser Processing of Advanced Materials

It is with deep sadness that The Laser Institute (LIA) announces the passing of Dr. Nathaniel R. Quick on February 4, 2025, in Lake Mary, Florida, at the age of 75. Dr. Quick was a pioneering figure in laser processing of advanced materials and a dedicated leader within LIA, serving as its Executive Director from 2017 to 2023. His groundbreaking contributions to laser applications and his steadfast commitment to driving innovation have left an indelible mark on the industry and the global laser community.

Dr. Quick's tenure with LIA spanned decades, during which he played an instrumental role in guiding the organization's mission to promote lasers, laser applications, and laser safety worldwide. He was elected to the LIA Board of Directors multiple times, holding key leadership positions, including Secretary (2004-2007), President-elect (2009), and President (2010). In 2006, he was named an LIA Fellow, an honor recognizing individuals widely known for exceptional professional contributions to both the laser community and LIA. Beyond LIA, Dr. Quick was a renowned innovator and entrepreneur. As the founder, President, and CTO of AppliCote Associates, LLC, he pioneered advanced materials transformation using laser implantation at high pressures, amassing over 60 patents and publishing over 60 times throughout his prolific career. His work significantly impacted semiconductor processing, photonics, and energy technologies, positioning him as a leading authority in laser material interactions. His expertise was widely recognized through his affiliations with esteemed institutions, including serving as a quest researcher at the National Institute of Standards and Technology (NIST), Chairman of the Advisory Board and Graduate Faculty Scholar for Materials Science and Engineering at the University of Central Florida (UCF), and the Center for Research and Education in Optics and Lasers (CREOL) at UCF. He also served as a member of the Army Science Board.







Dr. Quick's influence will endure in the advancements he pioneered, the colleagues he inspired, and the future generations who will build upon his work. The Laser Institute extends our heartfelt condolences to his family and all those who were touched by his brilliance and kindness.

NEWSROOM

In Memoriam: Dr. Nathaniel R. Quick

Full Release



The mission of the Board of Laser Safety (BLS) is to provide a means for the recognition of laser safety professionals through certification and to promote competency in the field of laser safety. BLS certification will enhance the credibility of a designated Laser Safety Officer, and demonstrate that individuals serving in the field have agreed to adhere to high standards of safety and professional practice. For the employer, having a CLSO or CMLSO on staff demonstrates duediligence and helps to ensure legitimacy and adequacy of the laser safety program, validating the company's dedication to a safe working environment for all employees.

New ANSI Z136.7 for Testing and Labeling of Laser Protective Equipment



The newly revised ANSI Z136.7 (2025) is being released in April!

This standard provides reasonable and adequate guidance for consumers and manufacturers of laser protective equipment. It contains recommendations for testing and labeling laser protective materials and protective equipment such as eye protection, barriers, and windows designed for use with lasers and laser systems that operate at wavelengths between 180 nm and 106 nm.

Updates to the 2025 revision include testing of high energy laser saturation CW/Q-Switched, labeling of ultra-short and super continuum, and more.

Find these new standards, as well as the rest, on our website at **lia.org/store**

BLS at the International Laser Safety Conference (ILSC) 2025

We were excited to be at ILSC this year and get a chance to see all the CLSO & CMLSO's. This year saw great attendance, a new (and improved) check-in point for BLS points maintenance for attending the conference, and a fun raffle where we gave out a \$50 gift card for following and supporting BLS on social media channels!

We presented the BLS Illumination Award to DeWayne Holcomb who accepted on behalf of University of Texas – Austin. This award recognizes an institution, company, or organization that directly employs a certified laser safety officer and provides encouragement and support for employee participation within the laser safety community and/ or has made outstanding contributions to the field of laser safety and we were honored to present this to UT Austin.

Each full day of attendance at ILSC is worth 1 BLS CM, up to a maximum total of 4 BLS CM Points in Category 7: Attendance At Professional Meetings And Conferences. If you were at the event and would like to claim a Certificate of Attendance or have questions about your CM points, please email bls@lasersafety.org.

Here's a snapshot of many of the CLSOs and CMLSOs who attended ILSC 2025. This year, we had an incredible turnout with 49 CLSOs and 16 CMLSOs in attendance—your dedication to laser safety continues to inspire.



Write for BLS!

Looking for a way to earn BLS CM points for free? BLS has restarted it's newsletter and is inviting CLSOs and CMLSOs to share laser safety knowledge with the laser community! Published article submissions are worth 0.5 BLS Certification Maintenance (CM) points in Category 3. For more information on guidelines and regulations, email us at bls@lasersafety.org. Board of Laser Safety 12001 Research Pkwy, Suite 210 Orlando, FL 32826

Toll Free: 1.800.345.2737 Telephone: +1.407.985.3810 Email: bls@lasersafety.org Website: www.lasersafety.org

ADDING YOUR BLS CLSO[®] OR CMLSO[®] DESIGNATION TO YOUR LINKEDIN PROFILE

You've earned it—now make sure your professional network sees it.

Whether you're a Certified Laser Safety Officer (CLSO) or Certified Medical Laser Safety Officer (CMLSO), adding your credential to LinkedIn boosts your credibility and visibility in the industry.

Step 1: Go to Your LinkedIn Profile



Click the "Me" icon at the top, then select "View Profile."

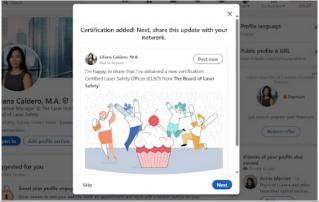
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Name: Certified Laser Safety Officer (CLSO) or Certified Medical Laser Safety Officer (CMLSO) Issuing Organization: Board of Laser Safety Issue Date: [Use your date] Expiration Date: [Use your date] Credential ID: [Your certificate number] (optional) Credential URL: www.lasersafety.org Upload your certificate: (optional)

Pro Tip

After adding your certification, create a post to share your achievement and tag the Board of Laser Safety on LinkedIn!

That's it! Your certification now appears under your profile's Licenses & Certifications section.

WANT TO SHARE YOUR IDEAS WITH THE LASER COMMUNITY THROUGH LIA TODAY?

LIATODAY

Check out the guest article guidelines below and get in touch with an editor today!

BEFORE YOU SUBMIT:

Content: We are always looking for great newsworthy content that covers challenges and innovations in the field of photonic materials processing, laser safety, and laser market trends. This is not a paid opportunity, but does carry the benefit of publishing your work on a platform that is read by thousands of your peers. All article topics should be confirmed with an LIA TODAY editor before writing your article. Please email your article ideas to <u>liatoday@lia.org</u> and an editor will be in touch with you.

Potential Categories: Safety, medical applications, research and development, laser applications fundamentals, history, business, and other categories.

Potential Industries: Energy storage, aerospace, DoD non-aerospace, automotive, medical devices and biotechnology, microelectronics and IC fabrication, Internet of Things, research and development, and other industries.

SUBMISSION GUIDELINES:

Style: The tone should be editorial and informative; it should not sound like a sales pitch. It should be comprehensible by a broad audience of readers with low to expert experience with the topic, so it is important to include examples and simple explanations alongside any technical language.

Length: 600 - 1500 words

Text: Please use standard fonts such as Arial, Calibri, or Times New Roman. Fonts, font sizes, and line spacing will be reformatted by LIA for the final piece. Grammar and mechanics will be edited to the LIA style guide by LIA, but please be mindful of spelling and grammar as you are writing so that your message is clear.

Headline: Please include two newsworthy headlines suggestions for your article using action verbs.

Images & Figures: Please include images to be used with the article. Submit as an email attachment (PNG, GIF, JPG, JPEG) (min. 1000px in width or height). Images should also be placed in the body of the text where the author would like them to appear in the final article. All figures or images should include captions.

Deadlines: All material is due no later than two weeks prior to the scheduled publishing date. Check with an editor for your deadline.

Note: LIA reserves the right to abstain from publishing a submitted article for any reason.

SUBMISSION CHECK LIST:

• Full text as a Word Document

- Abstract: A 50 100 word summary in plain language
- Two (2) headline suggestions using an action verb
- Article 600 1500 Words
- Images with captions placed in the body of the article
- Article references when applicable
- •Short author bio (full title, company, 50 words)
- (optional) Professional headshot of author

• Images attached in one of the accepted file types (.png, .tiff, .jpeg, .jpg) (min. 1000px width or height).

VIEW SUBMISSION FORM