

Patrick Murphy

(b) (6)

(personal email)

CURRICULUM VITAE

(updated March 24 2016)

Education

B.A., Laser Art and Technology, Oberlin College (1981)

Independent major; courses related to lasers and display technology included Electronic Music, Computer Graphics, Art, Holography, and Laser Safety. Taught two for-credit courses in Laser Technology to Oberlin students during January 1980 and 1981 sessions. Obtained FDA laser light show variance while in college.

M.B.A., Keller Graduate School of Management (2006)

Industry Work Experience

Nightlight Laser Design Studios, 1981-1986. Co-founder and president. Performed laser shows at the John F. Kennedy Center for the Performing Arts, (“A Seagull” with Kelly McGillis and Colleen Dewhurst, 1985), the French Embassy, the National Computer Graphics Association, and other laser displays including numerous laser Tinkerbell performances of Peter Pan, including performances with Cathy Rigby.

Pangolin Laser Systems, 1986-2001. Founded and was president of Pangolin, which became the industry leader in software for creating and performing laser light shows (>80% market share). Co-wrote and developed Lasershow Designer software; also managed general business and marketing. Sold Pangolin in 2001 and semi-retired.

International Laser Display Association (ILDA), 2006-present. Executive Director of 125-member trade association, working in the areas of technology standards, laser safety, awards. Managed annual conferences in Rimini, Italy; Heshan, China; Amsterdam; Moscow; San Antonio; Aalen, Germany; and Las Vegas.

Industry Volunteer Service

Member, SAE G-10T Laser Safety Hazards Committee, 1993-2000; 2006-present. Worked on committee of laser safety experts, pilots, military safety officers, and outdoor laser users such as observatories, communications and research. Helped develop guidelines for safe laser use in airspace.

Helped write regulations and forms that became FAA’s Advisory Circular 70-1, “Outdoor Laser Operations”, used by proponents to describe outdoor usage and by FAA to evaluate them for eventual objection or non-objection. Currently helping to write SAE Aerospace Recommended Practices document, ARP6378, “Guidance on Mitigation Strategies for Laser Illumination Hazards.”

Wrote the FAA's Laser Beam Exposure Questionnaire (online and PDF forms), 2013.

ILDA Board of Directors, 1994-1996. ILDA President 1995-1996. Was president when FDA shut down Las Vegas laser shows; did significant work to help keep U.S. outdoor laser shows legal and safe.

ILDA Airspace Issues Coordinator, 1996-2000; 2006-present. Responsible for the association's policies relating to laser-aviation safety.

Public Resources About Laser Safety

Developed ILDA's website **LasershowSafety.info**, providing "one stop shopping" for information about laser display safety and regulations.

LaserPointerSafety.com, 2008-present. Created and wrote comprehensive resource website providing news, facts and educated analysis to promote the general public's safe and responsible use of laser pointers, especially in the area of aircraft safety. It is the top Google search result for the terms "laser", "pointer" and "safety."

LaserSafetyFacts.com, 2013-present. Developed a concept for Laser Safety Facts labeling similar to FDA's Nutrition Facts and Drug Facts. The website not only explains the concept but is a working example, providing laser safety information for all classes of consumer lasers, pointers and projectors.

Awards and Honors

SAE Certificate of Appreciation, 2006. "In recognition of outstanding service as a document sponsor for Aerospace Recommended Practice 5674 - Safety Considerations for Aircraft-Mounted Lasers Projected into the Navigable Airspace."

SAE Certificate of Appreciation, 2011, "In recognition of outstanding service as a document sponsor for Aerospace Standard 6029 - Performance Criteria for Laser Control Measures Used for Aviation Safety."

ILDA Career Achievement Award, 2004. This is the International Laser Display Association's highest award, honoring "exceptional individuals with a distinguished history of achievement in the laser display industry."

ILDA Technology Awards

- ILDA Technology Award, Renumbering Algorithm 1992, 1st Place
- ILDA Technology Awards co-awarded with William R. Benner: Interceptor, 1992, 2nd Place; Laser Show Designer for Windows, 1994, Honorable Mention; Showtime, 1998, 1st Place
- ILDA Technology Award co-awarded with William R. Benner and Cory Simpson: Raster Laser Frames, 1996, 3rd Place

ILDA Artistic Awards

- ILDA Artistic Award, “Happy Holidays”, 1994, 2nd Place, Static Composition
- ILDA Artistic Award (producer), “Linea”, 2000, 1st Place, Special Application

Industry/Scientific Papers

“Is Deliberate Audience Scanning Unsafe?”, Patrick Murphy, Pangolin Laser Systems. Proceedings of the 1997 International Laser Safety Conference, pp. 493-502, Laser Institute of America.

“Lasers and Aviation Safety”, Patrick Murphy, ILDA. Proceedings of the 2009 International Laser Safety Conference, pp. 41-50, Laser Institute of America.

“Scanning Audiences at Laser Shows: Theory and Practice”, Patrick Murphy, ILDA, Greg Makhov, LSDI. Proceedings of the 2009 International Laser Safety Conference, pp. 334-343, Laser Institute of America. Updated version available online at http://www.laserist.org/files/audience-scanning_overview_latest.pdf

Formal Presentations

“Audience Scanning at Laser Light Shows”, March 16 2011. Patrick Murphy, ILDA and Greg Makhov, LSDI. Demonstration of safe audience scanning presented at the International Laser Safety Conference’s “Technical Practical Applications Seminar”. This was the first time many of the attendees deliberately had laser light introduced into their eyes.

“Better Informing the Public of Laser Exposure Injury Potential”, March 21 2013. Patrick Murphy, ILDA and Greg Makhov, LSDI. Presented at the International Laser Safety Conference. PDF of slides available online at <http://www.laserist.org/files/Murphy-Makhov%20ILSC%20slides%202013.pdf>

Invited Guest Speaker, Loughborough University, 14th Annual Laser Safety Forum, September 2009. Presented two papers, one on laser/aviation safety and one on audience scanning safety.

Invited Speaker, Air Line Pilots Association special conference, “Laser Illumination of Aircraft: A Growing Threat”, October 2011. Spoke on the topic “The Science of Lasers.” Other speakers included Randy Babbitt, FAA Administrator, and Congressman Daniel Lungren.

Invited Speaker, Airborne Law Enforcement Administration annual meeting, July 2012. Spoke on the topic “Laser Hazards to Pilots”.

“Laser Safety Concepts for Aviation”, Patrick Murphy, LaserPointerSafety.com. Presented at the 2015 International Laser Safety Conference.

“A Proposal for Improved Consumer Laser Safety Information”, Patrick Murphy, LaserSafetyFacts.com. Presented at the 2015 International Laser Safety Conference.

Patent

U.S. Patent No. 7,980,707 issued July 19, 2011 to Patrick Murphy (sole inventor) for “Audience Scanning Laser Display Projector and Associated Methods”