

## CURRICULUM VITAE OF DENNIS C. LEINER

Leiner Optics  
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**Education** B.S., Optics, 1975, University of Rochester, Rochester, NY  
M.S., Optics, 1977, University of Rochester, Rochester, NY  
Ph.D., 1982, Electromagnetics and Phys. Electronics  
University of Connecticut, Storrs, CT

### **Professional Experience**

- 8/15-present **Leiner Optics**, Cape Elizabeth, ME  
President – Providing technical guidance in medical optics product development.
- 8/10-12/16 **Lighthouse Imaging LLC**, Windham, ME  
Chief Technology Officer - Responsible for the technical direction of the company.
- 1/85-8/10 **Lighthouse Imaging Corp.**, Portland, ME  
President - Optical engineering, design services and OEM manufacture to the medical device industry. Projects have included disposable and reusable medical optics and endoscopic systems development, fiberoptic design, manufacturing and optical consulting to over 40 companies and institutions.
- 9/84-12/85 **University of Lowell**, Lowell, MA  
Assistant Professor - Teaching responsibilities included courses in optical instrumentation, fiberoptics, and lens design.
- 9/81-9/84 **Smith and Nephew Endoscopy, Inc.**, Andover, MA  
Principal Optical Engineer - Invention of new concepts in medical endoscopy, including technical management of product development; designed video endoscopic products; engineered fiberoptic illumination and sensor systems.

## **Publications**

1. Digital Endoscope Design, SPIE, DOI: 10.1117/3.2235283, eISBN: 9781510601604, 2016
2. "Rigid Endoscopes – Ensuring Quality Before Use and After Repair", AORN Journal, July 2004
3. "Implementing Cost-Effective Ways to Reduce Endoscope Repair Expense", Biomedical Instrumentation & Technology, May/June, 2003
4. "Infrared Thermography and Thermocouple Mapping of Radiofrequency Renal Ablation to Assess Treatment Adequacy and Ablation Margins", co-author, Urology, 62 (1), 2003
5. "Infrared Endoscopic Imaging System", co-author, SPIE Proceedings, Vol.3061
6. "Optical System for an Endoscope" U.S. Patent 5,412,504, co-inventor, 1995.
7. "Disposable Rigid Endoscope" U.S. Patent 4,964,710, inventor, 1990.
8. "Miniature Optics in the Hospital Operating Room", SPIE Critical Reviews of Technology Series, Vol. 935, April, 1988.
9. "Optical Component Specifications for Fiberoptics", SPIE Critical Reviews of Technology Series, Vol. 607, January, 1986.
10. "Measuring Cricket Eardrum Vibrations", IEEE Proc. of 11th Northeast Bioengineering Conference, Worcester, MA, March, 1985.
11. "A Fiber Fizeau Interferometer for Measuring Minute Biological Displacements", co-author, IEEE Transactions on Biological Engineering, July, 1984.
12. "Medical Endoscope Design Using GRIN Optics", Proc. of 5th Conference on Gradient-Index Imaging Systems, Monterey, CA, May, 1984.
13. "Fiber-Optic Interferometer for Remote Sub-Angstrom Vibration Measurement", co-author, Rev. Sci. Instr., Feb., 1984.
14. "Design of a Wide-Angle Gradient-Index Endoscope", co-author, Proc. of 4th Conference on Gradient-Index Imaging Systems, Kobe, Japan, July, 1983; ref. Patent #4,515,444, May 7, 1985, co-inventor.
15. "Correction of Chromatic Aberrations in Gradient Index Endoscopes", co-author, Applied Optics, 1 Feb., 1983.
16. "Engineering Considerations in the Application of Fiber Optic Cables", co-author, Wire Technology, May, 1979.
17. "Phase-Lock Interference Microscopy", co-author, Optical Engineering, Feb., 1979.
18. "Refractive Index Modulation in Optical Fibers Fabricated by the Vapor Oxidation Process", co-author, Fiber Optics: Advances in Research and Development, Plenum Press, 1979.
19. "Real-Time Phase Microscopy Using Phase-Lock Interferometry", co-author, Rev. Sci. Instr., Dec., 1978.
20. "Fine Structure of Refractive Index Profiles in Optical Fibers", co-author, Technical Digest of Conference on Physics of Fiber Optics, Kingston, RI, June 1978.
21. "Measuring Fiber Index Profile", Optical Spectra, June 1977.

## **Patents**

1. [4515444](#): Optical system
2. [4641927](#): Chromatic aberration corrected gradient index lens system
3. [4964710](#): Disposable rigid endoscope
4. [4969708](#): Fiberoptic endoscope
5. [5412504](#): Optical system for an endoscope
6. [5554100](#): Arthroscope with shim for angularly orienting illumination fibers
7. [5651759](#): Method of making arthroscope having a shim for angularly orienting illumination fibers
8. [5684629](#): Optical system for endoscope
9. [5711755](#): Endoscopic diagnostic systems and associated methods employing infrared radiation
10. [5718664](#): Light guide connection port for a disposable arthroscope
11. [5833596](#): Endoscope for imaging infrared emissions within the range of 2 to 14 microns
12. [5944653](#): Dual IR and visible channel endodiagnostic apparatus
13. [5997472](#): Endodiagnostic method using differential thermal relaxation and IR imaging
14. [6152872](#): Relay lens assembly for a disposable arthroscope
15. [6577339](#): Aircraft monitoring and analysis system and method
16. [6744467](#): Lens system for camera
17. [7022065](#): Endoscope Test Device
18. [8040496](#): System and method for an illumination-quality test
19. [8343042](#): Magnetically actuated endoscope coupler
20. [8727969](#): Endoscope
21. [8814779](#): Stereoscopic endoscope

## **Honors and Distinctions**

Maine International Trade Center, September 2010, International Innovator of the Year

Gradient-Index Optics and Miniature Optics: A Critical Review of Technology, SPIE, April 1988, Conference Chair.

"Applied Optics", 1 February 1988, Guest Editor.

Seventh Conference on Gradient-Index Imaging Systems, 1987, Program Chair.

New England Section, Optical Society of America Conversazione, 1985-86 Program Chair.

Sixth Conference on Gradient-Index Imaging Systems, 1985, North American Representative.

1985-86 Spring Conferences on Applied Optics, Program Committee.

American Cystoscope Makers, Inc. Fellowship, 1975-76.

## **Professional Societies**

International Standards Organization (ISO) Microscopes and Endoscopes Working Group (Project Leader, 2013-present)

Optics and Electro-Optics Standards Council (Chairman of the Board of Directors, 2018-present)

Biosciences Association of Maine (Vice President, 2016-present)

Maine International Trade Center (Board of Directors, 2011-2020)

Society of Photo-Instrumentation Engineers

Optical Society of America