

06/11

## CURRICULUM VITAE

### David Michael Harris, Ph.D.

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#### EDUCATION

Northwestern University, Evanston, IL			
Auditory Physiology	Ph.D.,	Neurophysiology	1977
Neuroscience (sensory physiology):	M.S.,	Psychology	1975
University of Illinois, Urbana, IL			
Philosophy / Psychology:	B.S.,	Arts and Sciences	1973

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#### RESEARCH ACTIVITIES

Onychomycosis, Neuroscience, Auditory Physiology, Vestibular implant, Otolaryngology, Laser Dentistry, Photobiology, Photodynamic Therapy, Medical Lasers, Robotics and Optoelectronics.

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#### RESEARCH AND PROFESSIONAL APPOINTMENTS

PathoLase, Inc., Chico CA	2009-
Director of Research	
University of Washington, Seattle WA	2005--2009
Department of Otolaryngology	
NRSA Senior Research Fellow	
University of California at San Francisco, S.F., CA	1998--2006
Department of Preventive and Restorative Dental Sciences	
Adjunct Professor	
California State University, Hayward	1999--2000
Department of Biology	
Part time faculty	
Yale University School of Medicine, New Haven, CT	1994--1998
Department of Surgery/Otolaryngology	
Visiting Associate Professor	
University of Illinois College of Dentistry, Chicago, IL	1993--1998
Department of Oral Biology	
Adjunct Assistant Professor	
Ravenswood Hospital Medical Center, Chicago, IL	1984--1992
Wenske Laser Center, Department of Surgery	
Director of Education	1986-1991
Senior Research Associate	1986-1991
Research Director	1984-1986
Department of Psychiatry	
Medical Staff	1985-1992
University of Illinois College of Medicine, Chicago, IL	1980--1987
Department of Otolaryngology-Head & Neck Surgery	
Research Assistant Professor and	
Director of Research	
Department of Anatomy	
Research Assistant Professor	
Northwestern University, Evanston, IL	1973--1980
Department of Communicative Disorders	
Assistant Professor	1977-1980
Doctoral candidate	1975-1977
Instructor Evening Division: Psychology	1974-1976
NDEA Fellow Department of Psychology	1973-1975

## PEER-REVIEWED JOURNAL ARTICLES [60]

- Ruth RE, JP Rosenfeld, DM Harris and P Birkel (1975). Effect of aversive and rewarding electrical brain stimulation on auditory evoked responses in albino rat tectum. *Physio. Behav.* 13:729-735.
- Dallos P. and D. Harris (1977). Properties of auditory nerve responses in the absence of outer hair cells. *J Neurophysiol.* 41:365-383.
- Dallos P, DM Harris, O Ozdamar and A Ryan (1978). Behavioral, Compound action potential and single unit thresholds: Relationship to normal and abnormal ears. *J. Acoust. Soc. Amer.* 64:151-157.
- Harris DM (1979). Action potential suppression, tuning curves and thresholds: Comparison with single fiber data. *Hearing Research* 1:133-154.
- Harris DM and P Dallos (1979). Forward masking of auditory nerve fiber responses. *J Neurophysiol.* 42:1083-1107.
- Siedentop KH, DM Harris and A Loewy (1983). Experimental use of Fibrin Tissue Adhesive in middle ear surgery. *Laryngoscope* 93:1310-1313.
- Harris DM and P Dallos (1984). Ontogenetic changes in cochlear frequency mapping in a mammalian ear. *Science* 225:741-743.
- Siedentop KH, DM Harris and DW Weber (1985). Fibrin Tissue Adhesive and glass ceramic strut for ossicular chain replacement. *Amer. J. Otology* 6:272-275.
- Siedentop KH, DM Harris and B Sanchez (1985). Autologous fibrin tissue adhesive. *Laryngoscope* 95:1074-1076.
- Siedentop KH, DM Harris and K Ham (1986). Extended experimental and preliminary surgical findings with autologous fibrin tissue adhesive made from patient's own blood." *Laryngoscope* 96:1062-1064.
- Cortis BS, Harris DM, Principe J (1986). From Angioscopy to Angioplasty. *Tex Heart Inst J* 13:281-289.
- Berg L, and DM Harris (1986). Microscopic Fluorescence in PDT. *Laryngoscope* 96:986-989.
- Harris DM, JH Hill, J Werkhaven, et al (1986). Porphyrin fluorescence and photosensitization in head and neck cancer. *Arch. Otolaryn.* 112:1194-1199.
- Hill JH, RL Plant, DM Harris, LI Grossweiner, B Rok, AJ Seter (1986). The nude mouse xenograft as a model for photodetection and PDT in head and neck cancer. *Amer. J. Otolaryngology* 7:17-27.
- Hill JH, B Rok, DM Harris, MA Cobleigh (1986). Fluorescent microscopy of hematoporphyrin derivative in the nude mouse tumor model. *Laryngoscope* 96:951-857.
- Lobraico RV, SM Waldow, DM Harris and S Shuber (1986). Photodynamic therapy for cancer of the lower female genital tract. *Colposcopy and Gynecologic Laser Surgery* 2:185-199.
- Hill JH, RL Plant, DM Harris and R Paniello (1986). Photodynamic therapy for head and neck cancer xenografts in athymic mice. *Otolaryngology-Head and Neck Surgery* 95:602-606.
- Harris DM and JH Hill (1986). Porphyrin Fluorescence: gross and microscopic localization. *Proceedings SPIE - Lasers in Medicine*, 712:66-71.
- Werkhaven J, DM Harris, G Krol, JH Hill (1986). Light dosimetry in animal models, application to photodynamic therapy in otolaryngology. *Laryngoscope* 96:1058-1061.
- Harris DM, KH Siedentop, K Ham and B Sanchez (1987). Autologous Fibrin Tissue Adhesive Biodegradation and Systemic Effects. *Laryngoscope* 97:1141-1144.
- Abt E, H Wigdor, R Lobraico, B Carlson, DM Harris, R Pycrz (1987). Removal of benign intraoral masses using the CO<sub>2</sub> laser. *J Amer Dent Assoc* 115:729-731.
- Harris DM and J Werkhaven (1987). Endogenous porphyrin fluorescence in tumors. *Lasers in Surgery and Medicine* 7:467-472.
- Harris DM (1987). Current source density analysis of frequency coding in the inferior colliculus. *Hearing Research* 25:257-266.
- Engel JM, NP Blair, DM Harris, DS Baker (1987). Use of the carbon dioxide laser in the drainage of subretinal fluid. *Am J Ophthal* 90:73-77.
- Epstein RJ, Stulting, RD, Hendricks, RL, and Harris, DM (1987). Corneal neovascularization: Pathogenesis and inhibition. *Cornea* 6(4):250-257.
- Harris DM (1988). Laser biostimulation: Review and hypothesis. *L.I.A. Laser Topics* 10(3):9-14.
- Arjmand E., DM Harris and P Dallos (1988). Developmental changes in frequency mapping of the gerbil cochlea: Comparison of two cochlear locations. *Hearing Research* 32:93-96.
- Vassalli L, Harris DM, Gradini R, Applebaum EL. Propylene glycol-induced cholesteatoma in chinchilla middle ears. *Am J Otolaryngol.* 1988 Jul-Aug;9(4):180-8.
- Vassalli L, Harris DM, Gradini R, Applebaum E (1988). Inflammatory effects of topical antibiotic suspensions containing propylene glycol in chinchilla middle ears. *Am J Otolaryngol* 8:1-5.
- Siedentop KH, DM Harris, B Sanchez (1988). Autologous fibrin tissue adhesive factors influencing bonding power. *Laryngoscope* 98:324-327.
- Wenig BL, DM Kurtzman, LI Grossweiner, DM Harris, RV Lobraico, RA Pycrz, (1990). Photodynamic therapy in

- the treatment squamous cell carcinoma of the head and neck. Arch Otolaryngol Head Neck Surg 116:1267-1270.
- Harris DM, R Rotche and T Freedom (1990). Postnatal growth of cochlear spiral in mongolian gerbil. Hearing Research 50:1-6.
- Harris DM (1991). Editorial Comment: Biomolecular Mechanisms of Laser Biostimulation. J. Clin Laser Med & Surg 9:277-280.
- Harris DM (1991). "Emerging technologies in the 90's: Medical lasers in the future." Proceedings of SPIE 1542:1523-25. [also published in "Photonics Spectra: 1991 Trends, 25:113-117.]
- Epstein RJ, Hendricks, RL, and Harris, DM (1991). Photodynamic therapy for corneal neovascularization. Cornea 10(5):424-432.
- Harris DM, M Yessik (1994). Contact pulsed Nd:YAG laser ablation of human dentin: Ablation rates and tissue effects. Proc SPIE 2128:409-415.
- Harris DM, M Yessik (1994). Contact pulsed Nd:YAG laser ablation of human dentin: Fiber tip and crater morphology (SEM). Proc SPIE 2128:416-423.
- Harris DM, B Evans, J Santos-Sacchi (1995). Laser selective microablation of sensitized intracellular components of auditory receptor cells. SPIE, 2396:254-259.
- Ostertag M, JT McKinley, L Reinisch, DM Harris, B Jean, NH Tolk (1996). Laser ablation as a function of the primary absorber in dentin. Lasers Surg Med 21:384-394.
- Harris DM, L Reinisch, G Edwards, M Yessik, S Ashrafi, J Santos-Sacchi (1996). Mid-infrared ablation of dentin with the Vanderbilt FEL. SPIE Proceedings 2672:333-340.
- Harris DM, TA Bell, L From, D Schachter (1996). Skin resurfacing with a very short pulsed CO<sub>2</sub> Laser. SPIE Proceedings 2671: 324-8.
- Harris DM, TA Bell, L From, D Schachter (1996). Le resurfacing du visage avec un laser CO<sub>2</sub> à pulse très court: Caractéristiques du faisceau et premiers résultats histologiques. Proc: Les Lasers en Dermatologie et en Chirurgie Plastique. Paris, France, Jan 1996, pp23-27.
- Harris DM, DS Fried, L Reinisch, T Bell, R Lyver (1997). Thermal measurements of short duration CO<sub>2</sub> laser resurfacing. SPIE Proceedings 2970: 319-326.
- Bell T, DM Harris, D Schachter (1997). 100 μsec pulsed CO<sub>2</sub> laser resurfacing of lower eyelids: Erythema and rhytid reduction. SPIE Proceedings 2970: 360-366.
- Harris DM, D Fried, L Reinisch, T Bell, R Lyver (1997). Thermal measurements of short duration CO<sub>2</sub> laser resurfacing. SPIE 2970:319-326.
- Harris DM, RV Shannon, R Synder, E. Carney (1997). Multi-unit mapping of acoustic stimuli in gerbil inferior colliculus. Hearing Research 108:145-156.
- Greenwell H, DM Harris, K Pickman, J Burkart, F Parkins, T Myers (1999). Clinical evaluation of Nd:YAG laser curettage on periodontitis and periodontal pathogens. J Dent Res 1999; 78:138.
- Harris DM, D Fried, L Reinisch, T Bell, D Schachter, L From, J Burkart (1999). Eyelid resurfacing. Lasers Surg Med 25: 107-122.
- Harris DM, D Fried (2000). Selective ablation of enamel caries with a pulsed Nd:YAG: I. Photoacoustic response and spectroscopy. SPIE Proceedings 3910:164-170.
- Harris DM, RH Gregg, DK McCarthy, LE Colby, LV Tilt (2002). Sulcular debridement with pulsed Nd:YAG. SPIE Proceedings 4610:49-58.
- Harris DM, JM White, HG Goodis, CJ Arcoria, JS Simon, WM Carpenter, D Fried, J Burkart, M Yessik, T Myers (2002). Selective ablation of surface enamel caries with a pulsed Nd:YAG dental laser. Lasers Surg Med 30:342-350.
- Harris DM and PM Loomer (2003). Ablation of *Porphyromonas gingivalis* *in vitro* with pulsed dental lasers, IADR abstr #855.
- Harris DM (2003). Letter to the Editor: Dosimetry for Laser Sulcular Debridement. Lasers Surg Med 33:217-218.
- Harris DM, RH Gregg, DK McCarthy, LE Colby, LV Tilt (2004). Laser-Assisted New Attachment Procedure in private practice. J Gen Dent 52(5):396-403.
- Harris, DM and M Yessik (2004). Therapeutic ratio quantifies laser antiseptics: Ablation of *Porphyromonas gingivalis* with dental lasers. Lasers Surg Med 35(3):206-213.
- Harris, DM, S Bierer, J Wells, JO Philips (2009). Optical nerve stimulation for a vestibular prosthesis. SPIE proc.7180-21.
- Harris DM, SL Jacques, R Darveau (2009). Effect of hemin concentration on *P gingivalis* optical absorption at 1064-nm. SPIE Proceedings 7162-21.
- Harris DM, J Strisower, B McDowell (2009). Pulsed laser treatment for toenail fungus. SPIE Proc. 7161A-121.
- Seidl A, EW Rubel, DM Harris (2010). Mechanisms for adjusting interaural time differences to achieve binaural coincidence detection. J Neurosci 30(1):70-80.

Abrahams M, M Abrahams, J Cozzerelli, AH Dow, R Grzywacz, M Uro, DM Harris (2011). Efficacy of FootLaser™ Treatment for Onychomycosis in 262 Patients from 5 Private Podiatric Practices: a Retrospective Study. *Laser Surg Med* (submitted)

#### BOOK CHAPTERS

- Dallos P, DM Harris (1977). Inner-outer hair cell interactions. In: Psychophysics and Physiology of Hearing. (EF Evans and JP Wilson, eds). Academic Press, London, p.147.
- Dallos P, A Ryan, DM Harris, T McGee and Ö Özdamer (1977). Cochlear frequency selectivity in the presence of hair cell damage. In: Psychophysics and Physiology of Hearing. (EF Evans and JP Wilson, eds.). Academic Press, London, p.249.
- Harris DM, J Werkhaven (1989). "Biophysics and Applications of Medical Lasers," in: Advances in Otolaryngology, Volume 3. Bluestone, ed. Year book Medical Publishers, Inc., NY, pp. 91-123.
- Werkhaven, JA., Ossoff, RH, Harris, DM. (1991). Lasers. Ft. Belvoir: Defense Technical Information Center. <http://handle.dtic.mil/100.2/ADA302841>
- Werkhaven JA, RH Ossoff, DM Harris (1992). "Physics and Biophysics of Medical Lasers." In: Lasers, M Smith, Ed., Year Book Medical Pub, Inc., Chicago, pp 91-123.
- Lobraico RV and DM Harris (1993). "Photodynamic Therapy in Gynecologic Neoplasia." In: Laser Surgery in Gynecology: A Clinical Guide. VC Wright, JC Fisher (eds), W.B. Saunders, pp 265-276.
- Harris DM, R Pick (1995). "Laser Physics." in: Lasers in Dentistry. L.J. Miserendino and R.M. Pick (eds.), Quintessence Pub. Co., Inc., Chicago, pp 27-38.
- Harris DM (1997). "Photonics (Optoelectronics) in Medicine and Surgery for the 21<sup>st</sup> Century." in DD Soares (ed), Innovation and Technology - Strategies and Policies, Kluwer Academic Pub., The Netherlands, pp.183-192..

#### PROCEEDINGS EDITOR

- Harris DM (ed.). Proceedings of the International Conference on Applications of Lasers and Electro-Optics: Lasers in Medicine. San Diego, CA, November, 1987.
- Harris DM, S Harmon (eds.). Medical Lasers and Systems. SPIE Proceedings, 1650:1-64, 1992.
- Harris DM, M Penny (eds.) Medical Lasers and Systems II. Proceedings SPIE, 2415:1-88, 1993.
- Harrington JA, DM Harris, A Katzir, FP Malanovitch (eds). Biomedical Fiber Optic Instrumentation Proceedings SPIE, 2131: 1994.
- Harris DM, JA Harrington and A Katzir (eds.). Biomedical Optoelectronic Instrumentation. Proceedings SPIE, 2396:1995.
- Anderson RR, KE Bartels, LS Bass, KW Gregory, DM Harris, et al (eds). Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems VII. Proceedings SPIE, 2970: 1997.

#### ABSTRACTS AND POSTERS

##### Auditory Research

- Harris DM and JP Rosenfeld (1975a). Frequency analysis by neuronal populations in the inferior colliculus of the rat. *J Acoust Soc Amer* 57:S53-54.
- Harris DM and JP Rosenfeld (1975b). Relationship between cellular excitation and inhibition and evoked potentials in the inferior colliculus of the rat. *J Acoust Soc Amer* 57:S54.
- Özdamer Ö, P Dallos, A Ryan and DM Harris (1975). Comparison of auditory thresholds determined behaviorally and electrocochleographically in normal and kanamycin treated gerbils. *Acoust Soc Amer* 58:S103-105.
- Harris DM, P Dallos and N Krause (1976). Forward and simultaneous tonal suppression of single fiber responses in the chinchilla auditory nerve. *J Acoust Soc Amer* 60:S81.
- Harris DM and P Dallos (1977). Unmasking in the auditory nerve. *J acoust Soc Amer* 62:S45.
- Harris DM (1978). Pulsation threshold in the auditory nerve. *J Acoust Soc Amer* 63:S53.
- Harris DM and P Dallos (1979). Measures of frequency selectivity in the chinchilla. Workshop on auditory frequency selectivity and speech perception. ARO 2<sup>nd</sup> Midwinter Res Meeting, St Petersburg Beach FL p 74.
- Harris DM, H Geller, L Halpern and D Koch (1979). Chronic N<sub>1</sub> thresholds in chinchilla. *J Acoust Soc Amer* 65:S41.
- Dallos P, DM Harris, E Relkin and MA Cheatham (1980). "Two-tone suppression and intermodulation distortion in the cochlea: Effect on outer hair cell lesions," In: Psychophysical, Physiological and Behavioral Studies in Hearing, van den Brink and FA Bilsen (eds.). Delft Univ. Press, Delft:242-251.
- Harris DM and P Dallos (1980). Comment on "The psychophysical approach to pulsation threshold." In: Psychophysical, Physiological and Behavioral Studies in Hearing. van den Brink and F.A.Bilsen (eds.) Delft University Press, Delft:220-221.

- Relkin E and DM Harris (1980). Experimental and analytic studies of synchronized responses in chinchilla auditory nerve. *J Acoust Soc Amer* 68:S66.
- Harris DM (1983). 3-D atlas of the central auditory pathway. *Assoc Res Otolaryngol* 6:13.
- Harris DM, M Timmins (1983). Complete reconstruction of the auditory system: adult gerbil. *J Acoust Soc Amer* 74:S40.
- Harris DM and A Riera-March (1985). Spatial patterns of synaptic input in inferior colliculus. 8<sup>th</sup> Midwinter Research Meeting of the Assoc. Research in Otolaryngology, St. Petersburg, FL. (abstr)P 35.
- Harris DM and DC Lambert (1986). Comparison of current source density analysis with multi-unit mapping in the inferior colliculus of gerbil. *J Acoust Soc Amer* 84:S120.
- Lambert DC and DM Harris (1986). A computational model for the calculation of field potentials resulting from given conductivity and current source matrices. *J Acoust Soc Amer* 84:S121.
- Harris DM, DA Goodman, DC Lambert, J Kotlarz (1987). Latency of multi-unit responses in inferior colliculus. *Assoc Res Otolaryngol*, 10<sup>th</sup> Midwinter Research Meeting, Clearwater Beach FL, p 177.
- Harris DM, DC Lambert, RA Shannon (1990). Trade-off between spatial and synchrony representations of stimulus frequency in gerbil IC. 13<sup>th</sup> Midwinter Research Meeting, Clearwater Beach FL, p 270.
- Evans B, DM Harris (1995). Subcellular selective photoablation in isolated outer hair cells. 18<sup>th</sup> Midwinter Research Meeting of the Assoc. Research in Otolaryngology, St. Petersburg, FL. (abstr)
- Harris DM, B. Evans and J. Santos-Sacchi (1995). Laser selective microablation of sensitized intracellular components within auditory receptor cells. *SPIE* 2396:260-265.
- Harris DM, A Seidl, K Whitham, E Rubel (2007). 3D reconstructions of avian auditory pathways. Northwest Auditory and Vestibular Meeting, Portland OR, Oct 2007 (poster).
- Harris DM, A Seidl, E Rubel (2008). The shape of laminaris. 31<sup>st</sup> Midwinter Research Meeting of the Assoc. Research in Otolaryngology, Phoenix, AZ (abstr).
- Seidl AH, DM Harris, EW Rubel (2009). Variations in parameters influencing conduction velocity indicate temporal compensation for axon length differences in the avian sound localization circuit. Society for Neuroscience, Chicago IL 259.6/V37.

### Otorhinolaryngology / Neurotology

- Vassalli L, DM Harris, R Gradini and EL Applebaum (1987). Propylene glycol-induced cholesteatoma in chinchilla middle ears. *Proceedings of the Fourth International Symposium on Recent Advances in Otitis Media.*, Vol 117:843-47.
- Harris DM, KH Siedentop, KR Ham, B Sanchez (1987). Autologous fibrin tissue adhesive: Biodegradation and systemic effects. *Middle Sec. Triologic Soc.*, Cleveland, January, 1987.

### Medical lasers: Basic science

- Andrews, Jr., AH and DM Harris (1982). Improvements for the carbon dioxide laser. *Proc. of the Medicine and Biology Symposium. Laser Institute of America* 32:31-33.
- Werkhaven J, DM Harris and DC Lambert (1987). Progress report on the transmission of 630nm light through human skin *In Vivo*. *L.I.A. Vol 55 ICALEO*:8-10.
- Werkhaven J, DM Harris (1988). Superpulse CO<sub>2</sub> laser tissue effects. *Proc 2nd Int Laser Congr.*
- Harris DM and J Werkhaven (1988). Clinical consequences of laser/tissue interactions. *Proc. IEEE/EMBS Vol. 224*:127-131.
- Harris DM (1992). The expanding Role of Lasers in Medical Science. *J.Laser Applic.* 4:42.
- Harris DM, D Paloyan, D Tracy, L Grossweiner (1991). Thermal characteristics and rat liver damage by Nd:YAG and argon contact tips. *Laser Surg Med, Suppl 3*: 22 (abstr).
- Harris DM, D Butterworth, J Salvatori, D Jansen (1993). The Optical Properties of Wet Towels. *Proc. Int'l Laser Safety Conf.*, Cincinnati, Dec. 1992.
- Harris DM and SL Jacques (2005). Monte Carlo Simulation of depth of kill of *P gingivalis* in dentin based on experimental damage threshold. *ASLMS, Orlando FL, April 2005.*

### Photodynamic Therapy (PDT)

- Harris DM, Going R, Grossweiner L, Braverman C, Hassanin M (1985). Hematoporphyrin derivative fluorescence of squamous carcinoma in hamster cheek pouch. *Laser Surg Med* 5:138.
- Going R, DM Harris (1985). Fluorescence (HPD) detection of oral carcinoma in hamster cheek pouch. *IADR, Las Vegas, May 1985.*
- Harris DM (1986). HPD fluorescence and photo-oxidation of malignancies. *Proceedings ICALEO* 55:5.
- Werkhaven J, R Plant, DM Harris, J Fitzgibbons (1986). Determination of light dosimetry in an animal model of photodynamic therapy. *Lasers Surg Med* 5:140.

- Harris DM., JP Kotlarz and MK Palit (1987). Differential response of squamous cell tumors and normal mucosa to photodynamic therapy in hamster cheek pouch. L.I.A. Vol. 55 ICALEO:11-13.
- Hill JH, BC Levin and DM Harris and RM DeMay (1987). "Effects of photodynamic therapy on fibroblasts and vasculature in a head and neck squamous cell carcinoma animal mode-A preliminary report." L.I.A., Vol.55 ICALEO:14-17.
- Waldow SM, RV Lobraico, DM Harris, JH Hill, M Munoz, RA Pycrc, EA Kuruc, BC Levin, RL Plant, B Roc (1987). Clinical trials utilizing photodynamic therapy for cancer. Lasers Surg Med 6:88. (abstract)
- Goodman D, D Steeber, R Albrecht, DM Harris, C Kort, S Goodman and J Hill (1987). Scanning electron microscopy of tumor vascular casts following PDT. L.I.A. Vol. 55 ICALEO:18-19.
- Wenig BL, LI Grossweiner, DM Harris, RA Pycrc, M Tracy (1991). PDT of Head and Neck Squamous Cell Carcinoma: Treatment Planning and Clinical Trail. Proc 2nd Great Lakes Meeting in Photodynamic Therapy, Toledo, April, 199, pp 1-6.
- Lobraico RV and DM Harris (1993). "Photodynamic Therapy in Gynecologic Neoplasia." In: Laser Surgery in Gynecology: A Clinical Guide. VC Wright, JC Fisher (eds), W.B. Saunders, pp 265-276.

### **Laser Biostimulation**

- Harris DM, Tiesenga J, (1987). "Inhibition of fibroblast proliferation .05-2 J/cm<sup>2</sup> at 630nm." ICALEO '87, San Diego, CA, November, 1987 (abstr).
- Harris DM (1989). Biomolecular mechanisms of laser biostimulation. Proc 8th Cong of the International Society for Laser Surgery and Medicine, Taipei, Republic of China, November, 1989.
- Harris DM (1990). Review Article: Proposal for a mechanism of action for laser biostimulation. J Bloodless Surgery (Argentina) 8(1):36-41.

### **Plastic Surgery / Dermatology / Podiatry**

- McCraw JB, TA Bell, M Galumbeck, DM Harris (1996). Practical considerations in CO<sub>2</sub> laser skin resurfacing. J. Aesthetic Society 27:128 (abstr)
- Harris DM, TA Bell, L From, D Schachter (1996). Skin resurfacing with a very short pulsed CO<sub>2</sub> Laser. SPIE Proceedings 2671: 324-8.
- Harris DM, TA Bell, L From, D Schachter (1996). Le resurfacing du visage avec un laser CO<sub>2</sub> à pulse très court: Caractéristiques du faisceau et premiers résultats histologiques. Proc: Les Lasers en Dermatologie et en Chirurgie Plastique. Paris, France, Jan 1996, pp23-27.
- Harris DM, DS Fried, L Reinisch, T Bell, R Lyver (1997). Thermal measurements of short duration CO<sub>2</sub> laser resurfacing. SPIE Proceedings 2970: 319-326.
- Bell T, DM Harris, D Schachter (1997). 100 μsec pulsed CO<sub>2</sub> laser resurfacing of lower eyelids: Erythema and rhytid reduction. SPIE Proceedings 2970: 360-366.
- Harris DM, J Strisower, B McDowell (2009). FootLaser treatment for toenail fungus. The Society of Chiropodists & Podiatrists Annual Conference 2009, Harrogate England, November 2009. (poster)

### **Cardiology**

- Cortis BS, DM Harris (1984). Angioscopy of hematoporphyrin derivative in experimental athero-sclerosis. L.I.A. Vol 32, ICALEO.
- Cortis BS, DM Harris, J Principe (1985). Angioscopic visualization of atherosclerotic marker. Lasers Surg Med 5:170. (abstract)
- Harris DM, (1999). Photoacoustic tissue disruption creates laser lacunae that perfuse ischemic myocardium. Laser Surg Med 11 (Suppl):9. (abstract)

### **Dentistry**

- Harris DM and Wigdor, H (1987). The Q-Switched Nd:YAG as a Dental Drill. Bio-Laser News 2:3-5.
- Wigdor, HA, R Lobraico, E Abt, B Carlson, D Harris and R Pycrc (1988). The use of the CO<sub>2</sub> laser to remove dental decay. L.I.A. Vol 55 ICALEO:8-10.
- Harris DM, L. Miserendino, E. Abt (1993). Training Dentists to Use Lasers. Proc. Int'l Laser Safety Conf., Cincinnati, OH, Dec. 1992, pp 8-12.
- Harris DM, M Yessik, S Kuhn (1995). Contact, pulsed, Nd:YAG laser ablation of human hard tissue. Academy of Laser Dentistry, Phoenix, AZ (abstr).
- Harris DM, L Reinisch, S Ashrafi, M Yessik, S Kuhn (1996). Infrared laser ablation of human dentin: Crater geometry and ablation rates. Scanning Microscopy (abstr).
- Harris DM, D Fried, L Reinisch (1996). Mid-infrared ablation of dental hard tissues with the Vanderbilt FEL: Evaluation of tubule sealing and selective protein ablation at 6.45μm. Scanning Microscopy.

- Greenwell H, DM Harris, K Pickman, J Burkart, F Parkins, T Myers (1999). Clinical evaluation of Nd:YAG laser curettage on periodontitis and periodontal pathogens. *J Dent Res* 78:138.
- Harris DM, CA Arcoria, J White, J Simon, J Burkart, T Myers (2000). Selective ablation of enamel caries with a pulsed Nd:YAG: I. Histology and clinical trials. *SPIE Proceedings* 3910:184-192.
- Harris DM (2004). Laser antiseptics of *Phorphyromonas gingivalis* in vitro with dental lasers. *SPIE Proceedings* 5313-22.
- Harris DM and SL Jacques (2005). Monte Carlo Simulation of depth of kill of *P gingivalis* in dentin based on experimental damage threshold. *ASLMS, Orlando FL, April 2005.*

### Ophthalmology

- Epstein RJ, Stulting, RD, Hendricks, RL, and Harris, DM (1987). Corneal neovascularization: Pathogenesis and inhibition. *Proc. World Congr. on the Cornea, III.* (abstr)
- Epstein RJ, Hendricks, RL, Harris, DM, Maloney, JA (1988). Dihematoporphyrin ether photodynamic therapy (DHE-PDT) for IL-2-induced corneal neovascularization (CNV). *Invest Ophthalmol Vis Sci* 29(Suppl):50.

### INVITED LECTURES

- "Forward masking and pulsation threshold in the auditory nerve." Symposium on non-simultaneous techniques in physiological and psychological measurement, 95th Meeting of ASA, Providence, RI, May 1978.
- "Anatomy and physiology of the auditory system." The Annual Otolaryngologic Assembly, The Abraham Lincoln School of Medicine, Chicago, IL, September 1978.
- "Measures of frequency selectivity in the chinchilla." Workshop on auditory frequency selectivity and speech perception, Midwinter Res. Mtng. ARO, St. Petersburg, FL., January, 1979.
- "Auditory Brainstem Testing." Neurotology workshop, University of Illinois Eye & Ear Infirmary, Chicago, June 1980.
- "Neurophysiology of the Auditory Brain Stem Response," University of Virginia Med. Center, Charlottesville, VA, January 1981.
- "Generators of the Auditory Brainstem Response," Distinguished Lecturer Series, Teachers College, Columbia University, New York, NY, September 1981.
- "Photoradiation Therapy," 40th Annual Midwest Conference, Chicago Medical Society, Chicago, IL, March 1984.
- "History and Future of Photoradiation Therapy in Malignant Tumors," Congress on Laser Neurosurgery, III, Northwestern University, Chicago, IL, November 1984.
- "Overview of Laser Physics and Tissue Effects of the Laser," International College of Podiatric Laser Surgery, Chicago, IL, December 1984.
- "Overview of Photoradiation Therapy & Tunable Dye Laser," Continuing Medical Education Conference, Ravenswood Hospital Medical Center, Chicago, IL, December 1984.
- "Photodynamic Therapy for the Treatment of Cancer." Oral Biology Seminar, Univ. of Illinois College of Dentistry, Chicago, IL, January 1985.
- "Scientific Basis of Photodynamic Therapy - Experimental Treatment for Cancer." Laser Surgery, 41st Annual Midwest Clinical Conference, Chicago Medical Society, Chicago, IL, Feb., 1985.
- "Neuronal Ensemble Coding of Stimulus Frequency in Gerbil Tectum," Dept. of Anatomy, University of Illinois at Chicago, Chicago, IL, October 1985.
- "Central Mechanisms of Audition," Distinguished Lecturer Series, Teachers College, Columbia Univ., New York, NY, December 1985.
- "Porphyrin Fluorescence in Tumors," 42nd Annual Midwest Conference, Chicago Medical Society, Chicago, IL, February 1986.
- "Basic Laser Physics and Laser Tissue Interactions," CO<sub>2</sub> Laser Workshop, Munster, IN, April 1986.
- "Medical Lasers in the Future," Lasers in Family Practice Workshop, Wenske Laser Center, Chicago, IL, May 1986.
- "Structural and functional development of the mammalian cochlea." American Speech and Hearing Association National Meeting, Detroit, MI, November 1986.
- "Structural and functional development of the gerbil cochlea," Kresge Hearing Institute, Ann Arbor, MI, Nov. 1986.
- "HPD Fluorescence and Photo-oxidation of Malignancies," ICALEO '86, Richmond, VA, November 1986.
- "Current and Multi-unit Maps of Tone-evoked Activity in Inferior Colliculus of the Gerbil." Dept. of Otolaryngology, University of Minnesota, Minneapolis, MN, March 1987.
- "Laser Biophysics." Applications of Laser in Infertility Surgery, Abbott Northwestern Memorial Hospital, Minneapolis, MN, March 1987.
- "The Application of Animal Models in PDT." Symposium on Photodynamic Therapy, Amer. Soc. for Laser Med. and Surg., 7th Annual Meeting, San Francisco, CA, April 1987.

- "Laser Biophysics." Lasers in Podiatry Workshop, Northwest General Hosp, Milwaukee, WI, April 1987.
- "Applications of Laser in Medicine." Delnor Community Hospital, St. Charles, IL, April 1987.
- "Multi-unit Mapping of Auditory Evoked Responses in Gerbil Inferior Colliculus." Department of Surgery, Southern Illinois University School of Medicine, Springfield, IL, May 1987.
- "Photodynamic Therapy for Treatment of Cancer." Department of Oncology, Southern Illinois Univ School of Medicine, May 1987.
- "The Interactions of Laser Light with Living Tissue," and "Basic Mechanism and Clinical Applications of Photodynamic Therapy." Pitt County Medical Center, Greenville, NC, June 1987.
- "Laser Stapedotomy," ICALEO '87, San Diego CA, November, 1987.
- "Laser Biophysics and Tissue Effects," Des Moines General Hosp, Des Moines, IA, November 1987.
- "Effects of CO<sub>2</sub>, Argon and Q-switched Nd:YAG Laser on Middle Ear Ossicles," LASERS 87, Lake Tahoe NV, December 1987.
- "CO<sub>2</sub>, Argon, Yellow Dye, Nd:YAG, Laser Physics, and Tissue Interaction," Multi-Wavelength Laser Conference, Loyola University of Chicago Medical Center, Maywood, IL, December 1987.
- "Laser Biophysics and Tissue Interaction," Clinical Applications of Lasers, St. Elizabeth's Hospital, Chicago, IL, January 1988.
- "The Biophysical Effects of Medical Lasers," Lasers in General Surgery, Medical College of Ohio, Toledo, OH, January 1988.
- "Laser Physics," and "Update on Photodynamic Therapy," Laser Surgery, 44th Annual Midwest Clinical Conference, Chicago Medical Society, Chicago, IL, March 1988.
- "Laser biophysics, tissue effects and laser safety," Laser Seminar: Plastic Surgery, Dermatology & Otolaryngology, Wilson N. Jones Memorial Hospital, Sherman, TX, March 1988.
- "Clinical Consequences of Laser/Tissue Interactions." Plenary Lecture, IEEE/Engineering in Medicine and Biology Society, New Orleans, November 1988.
- "Clinical Application of Lasers," SPIE-Chicago Regional Chapter Meeting, December 1988.
- "Laser Physics, Laser-Tissue Interaction, and Laser Delivery Systems," LASERS 1989, Introduction to Laser Biophysics and Applications in Otolaryngology-Head and Neck Surgery, University of Pittsburg and Children's Hospital of Pittsburg, January 1989.
- "Establishing a Laser Center-Experimental procedures," SPIE-OE/LASE'89, Los Angeles, January 1989.
- "Basic Laser Biophysics" and "Comparison of CO<sub>2</sub> Laser with Electro-surgery and Scalpel." Laser Applications in General Surgery, Dermatology, Gynecology and Podiatry, Ottawa Hospital, Ottawa IL, February 1989.
- "Laser Biostimulation" and "Future Applications of Medical Lasers." Laser Surgery, 45th Annual Midwest Clinical Conference, Chicago Medical Society, Chicago, IL, February 1989.
- "Tissue reaction and biophysics of lasers." Basic Science Conference, University of Health Sciences, The Chicago Medical School, Chicago, IL, May 1989.
- "Laser applications in Medicine and Surgery." Norwegian American Hospital, Chicago, IL., June 1989.
- "Spectrographic representations of neural activity in the inferior colliculus." House Ear Institute Colloquium Series, Los Angeles, CA, July 1989.
- "Mechanisms of low energy laser/tissue interactions." ICALEO '89, Orlando, FL, November 1989.
- "Biomolecular mechanisms of laser biostimulation." 8th Congress of the International Society for Laser Surgery and Medicine, Taipei, Republic of China, November 1989.
- "Space/time maps of activity evoked in gerbil inferior colliculus." Coleman Research Laboratory, University of California, San Francisco, January 1990.
- "Biophysical effects of the argon laser," Humana Hospital, Dallas TX, May 1990.
- "Laser physics, laser/tissue interactions, experimental systems and techniques," Gynecologic Laser Society, Chicago, IL, June 1990.
- "Molecular Basis of Laser Biostimulation," Gordon Research Conferences, Meriden, NH, July 1990.
- "Laser physics: CO<sub>2</sub> and holmium lasers," Laser Applications in Orthopedics, Houston Laser Institute and Coherent Lasers, Arlington Hts, IL, August 1990.
- "MVMA Laser Safety Seminar: Medical Considerations," Motor Vehicle Manufacturers Association, Detroit, MI, September 1990.
- "Emerging technologies for the 90's: The future of lasers in medicine and surgery," SPIE, Optical Engineering Midwest, Rosemont, IL, September 1990.
- "Laser Biophysics and Basics of Photodynamic Therapy," Hospital Hotel Deux, Montreal, Canada, October 1990.
- "Molecular biology of laser biostimulation," Chicago Institute of NeuroSurgery and NeuroResearch, Chicago, IL, December 1990.
- "Biophysical properties of medical laser," Clinton Community College, Plattsburgh, NY, January 1991.
- "Laser biophysics," Dept of Surgery, Rush Presbyterian/St. Lukes, Chicago, IL, February 1991.
- "Medical lasers," Biologic Resource Laboratory, Cont. Education Seminars, Chicago, IL, February 1991.

- "Laser physics and tissue effects," Midwest Laser Institute, Bloomington, IL, March 1991.
- "Emerging medical laser technology," ASLMS Advanced Laser Nurse Workshop, San Diego, April 1991.
- "Laser biophysics," Department of Gastroenterology, University of Pittsburgh, Pittsburgh, PA, June 1991.
- "Laser biophysics," St. Joseph Hospital, West Bend, WI, June 1991.
- "Laser tissue effects and applications in ENT," Midwest Laser Inst., Bloomington, IL, August 1991.
- "The role of Consultants in Acquiring Medical Laser Technology," American Academy of Otolaryngology-HNS, Annual Meeting, Kansas City, MO, September 1991.
- "Laser/tissue effects in orthopedics," Meadowcrest Hospital, New Orleans, LA, October 1991.
- "Future developments of medical laser technology," 9<sup>th</sup> Congress of the International Society for Laser Surgery and Medicine, Anaheim, CA, November 1991.
- "Technological Trends in Medical Lasers," SPIE OELASE'92, Biomedical Optics, Los Angeles, CA, January 1992.
- "Clinical laser concepts for biomedical engineers," Short course, SPIE OELASE'92, Los Angeles, January 1992.
- "Future Vistas in Laser Applications to Medicine," Laser Surgery, 48th Annual Midwest Clinical Conference, Chicago Medical Society, Chicago, IL, March 1992.
- "Lasers in the Future," 10<sup>th</sup> Annual Charles D. Branch Symposium, St. Francis Medical Center and the University of Illinois College of Medicine at Peoria, Peoria, IL, March 1992.
- "Biophysics and Photobiology of Lasers in Dentistry," Loyola University School of Dentistry Alumni Association, Maywood, IL., March 1992.
- "Research Goals in Laser Biostimulation," Lasers in Otolaryngology-Cherry Blossom Conference, American Academy of Otolaryngology-HNS, Washington, D.C., March 1992.
- "The Future of Lasers in Medicine and Surgery," Victory Laser Center Inauguration, Waukegan, IL, April 1992.
- "Laser Biostimulation" (Plenary), American Society for Lasers in Surgery and Medicine 12th Annual Meeting, Orlando, FL, May 1992.
- "Training Dentists to Use Lasers," International Laser Safety Congress, Cincinnati, OH, December 1992.
- "Optical Properties of Wet Towels," Int'l Laser Safety Congress, Cincinnati, OH, December 1992.
- "Laser Instrumentation and Laser/Tissue Interactions," Laser Dentistry Short Course SPIE OELASE'92, Los Angeles, CA, January 1993.
- "Design of Medical Laser Systems," PIE-Chicago Regional Chapter Meeting, February 1993.
- "Future Trends in Laser Surgery III," 49th Annual Midwest Clinical Conference, Chicago Medical Society, Chicago, IL, March 1993.
- "Basic Laser Physics and Tissue Effects," "Introduction to Laser Dentistry," University of Illinois College of Dentistry, Chicago, IL, March 1993.
- "Laser Safety in the Dental Profession," "Credentialing for the Safe and Effective Use of Lasers in Dental Practice," and "Laser Training and Experience in the Dental Profession." American Society for Lasers in Surgery and Medicine, 13<sup>th</sup> Annual Meeting, New Orleans, LA, April 1993.
- "Laser Applications in Dentistry," 12<sup>th</sup> Latin American Course in Pedodontics and Periodontics, University of Illinois College of Dentistry, Chicago, July 1993.
- "Characteristics of Medical Lasers," Optical Engineering Midwest'93 (Short Course), Chicago, September 1993.
- "Advances in imaging and electro-optics," Laser Surgery, 50<sup>th</sup> Annual Midwest Clinical Conference, Chicago Medical Society, Chicago, IL, February 1994.
- "Laser Instrumentation and Laser/Tissue Interactions," Laser Dentistry Short Course SPIE OELASE'92, Los Angeles, CA, January 1993.
- "Applications of Diode Lasers" Short Course SPIE OELASE'92, L.A., CA, January 1994.
- "Photodynamic Therapy in Head and Neck Cancer," Dept Otolaryngology, Yale University, March 1994.
- "Laser Ablation of Dentin," University of Illinois College of Dentistry, Chicago, April 1994.
- "Laser Microablation of the Cochlear Capsule," Auditory Research Seminar, Northwestern University, April 1994.
- "Multiunit maps of stimulus-evoked responses in mammalian tectum," Department of Otolaryngology, Yale University, October 1994.
- "Contact, pulsed, Nd:YAG laser ablation of human hard tissue," Academy of Laser Dentistry, Phoenix Jan. 1995.
- "Subcellular selective photoablation in isolated outer hair cells," Assoc Research in Otolaryngology, St. Petersburg, FL, February 1995.
- "Laser selective microablation of sensitized intracellular components of auditory receptor cells," SPIE Photonics West, San Jose, CA, February 1995.
- "Scientific rigor and clinical relevance in dental research," College of Dentistry, University of Illinois at Chicago, February 1993.
- "The investment on emerging applications of optoelectronics on the health care industry in the 21st century (Keynote Lecture)," Innovation and Technology in the 21st Century, University Lusitana, Oporto, Portugal, March 1995.

- "Biophysics of laser skin resurfacing," Laser Resurfacing Workshop,--th Annual Meeting of the American Association of Plastic Surgeons, Montreal, Canada, October 1995.
- "Laser removal and modification of dental hard tissue," State of the Art Symposium" 7th International Dental Congress, Cairo, Egypt, November 1995.
- "Skin resurfacing with a 60  $\mu$ sec pulsed CO<sub>2</sub> laser," Lasers in Aesthetic Surgery: A Business Forum, Washington, D.C., February 1996.
- "The science of laser skin resurfacing." Meeting of the Korean Dermatology Society, Seoul, Korea, March 1996.
- "Tissue response to laser resurfacing of facial skin." American Society of Aesthetic Plastic Surgery, Orlando, FL, May 1996
- "High energy ultra-short pulsed CO<sub>2</sub> laser technology." Canadian Dermatology Association Satellite Symposium, Banff, Alberta, Canada, June 1996.
- "Surgical Laser Science." Applications of the CO<sub>2</sub> laser for skin resurfacing, Dallas, TX, July 1996.
- "The scientific basis of laser skin resurfacing." Yonsei University, Seoul, Korea, July 1996.
- "Laser resurfacing of facial skin." Mexican Dermatologic Society, Guadalajara, Mexico, October 1996.
- "Le resurfacing du visage avec un laser CO<sub>2</sub> à pulse très court." Intl Symposium on Aging Skin. Paris, France, Nov 1996.
- "Nd:YAG laser periodontal therapy in private practice." Academy of Laser Dentistry IX<sup>th</sup> Annual Meeting, San Diego, CA, March 2002.
- "Overview of the basic principles of dental laser / oral tissue interactions." Institute for Advanced Laser Dentistry, Hunnington Beach, CA, February 2004.
- "Lasers in Medicine, Surgery & Dentistry." Louisiana School of Dentistry, New Orleans LA, March 2004.
- "Lasers in Surgery, Medicine and Dentistry." The Texas Academy of Laser and High-Tech Dentistry Southern Laser Conference, San Antonio, TX, August 2004
- "Bactericidal light." 26<sup>th</sup> Annual International Conference IEEE Engineering in Medicine and Biology, San Francisco, CA, September 2004
- "Laser physics, laser/tissue interactions, dosimetry and bacterial reduction." Millennium Dental Technologies 2<sup>nd</sup> Annual Clinician's Meeting, Las Vegas, NV, February 2005.
- "Computer simulation of depth of kill of *P. gingivalis* in dentin by laser based on experimental damage threshold." ASLMS Houston, TX, April 2005.
- "Targeting periodontopathogens with lasers." Millennium Dental Technologies 5<sup>th</sup> Annual Clinician's Meeting, Cancun, Mexico, February 2008.
- "After 20 years of laser dentistry, what have emerged as useful applications?" International Academy of Oral Medicine and Toxicology – Spring Meeting. Chicago, March 2008.
- "There's more to laser physics than meets the remaining eye." Millennium Dental Technologies 6<sup>th</sup> Annual Clinician's Meeting, Cancun, Mexico, February 2009
- "Head to toe." LSU Dept Otolaryngology, March, 2009.

**CONSULTATION**

Biomedical Consultants, Inc. Evanston, IL / Lynnwood, WA 1980-current  
 Director

**TEACHING EXPERIENCE**

California State University Hayward, Dept. Biology 1999-2000  
 "Introduction to Biology" (A1001)  
 Professional Medical Institutes and Societies 1985-date  
 "Applications of Lasers in Medicine and Surgery"  
 (Physicians, Dentists and Nurses: C.M.E.)  
 University of Illinois, College of Medicine 1980-1986  
 "Anatomy and Physiology of Hearing" (1st Year Residents, R1)  
 "Neuroanatomy" (1st year Medical Students, M1)  
 "Independent Research" (M1-R5, Attending Physicians)  
 Northwestern University, Department of Communication Sciences 1974-1979  
 "Introduction to Psychology" (A10)  
 "Biological Basis of Communication" (B10)  
 "Auditory Physiology and Anatomy" (C02)  
 "Anatomy and Physiology of the Central Auditory System" (E03)

**PROFESSIONAL SOCIETIES**

American Association for the Advancement of Science 1977-  
 Association for Research in Otolaryngology 1979-  
 Education Committee 2006-2008  
 Planetary Society 1980-  
 American Society for Lasers in Medicine & Surgery (Scientific Fellow) 1986-  
 Board of Directors 2011-2014  
 Section Chair 1987, 1992, 1997  
 Safety and Hazards Committee 1992-1994  
 SPIE - The International Society for Optical Engineering 1990-  
 Conference Chair 1992-1997  
 Midwest Bio-Laser Institute (Board of Trustees, Co-founder) 1981-1994  
 Editor in Chief: Bio-Laser News 1981-1984  
 Treasurer 1985-1992  
 Assistant Treasurer 1992-1994  
 Laser Institute of America (Senior member) 1986-1994  
 Program Chair 1987, 1992, 1993  
 Board of Directors 1991-1994  
 Laser Safety Committee 1992-1993  
 International Society for Laser Surgery & Medicine 1989-1994  
 Int'l Advisory board 1992-1993  
 Chicago Chapter. SPIE: Board of Directors 1991-1995  
 Vice Chair 1991-1993  
 Chair 1993-1994  
 Acoustical Society of America 1976-1987  
 Chicago Astronomical Society 1983-1985  
 American Academy of Otolaryngology-Head & Neck Surgery 1985-1997  
 American Society for Photobiology 1985-1987

**SCIENTIFIC / MEDICAL CONFERENCES AND WORKSHOPS**  
**Professional Societies: Scientific Meetings and Symposia**

- "Special Session on Anatomy, Physiology and Information Processing in the Central Auditory Pathways." 109th Meeting of the Acoustical Society of America, Austin, TX, April 1985, Session Chairman.
- "Recent Advances in Laser Therapy for Cancer." American College of Surgeons, Chicago, IL, October 1985, Co-Chairman.
- "The Nd YAG Laser: Application in Gynecology." Amer. Assoc. of Gynecologic Laparoscopists, Chicago, IL, September 1986, Organizer.
- "Basic Science Section." Annual Meeting of the American Society for Laser Medicine and Surgery, San Francisco, CA, April 1987, Program Chairman.
- "Advanced Photobiology," Plenary Session Session Chair.
- "Research Directions in Photodynamic Therapy" Session Chair.
- "Basic Science and Safety I & II" Session Chair.
- "Basic Science," Parade of Specialties Plenary Lecture.
- "International Congress on Laser Research in Medicine." Laser Institute of America, San Diego, CA, November, 1987, Program Chairman.
- "Lasers in Dentistry - 1988 and the Future." Organizer.
- Midwest Bio-Laser Institute, Orlando, FL, April 21-23, 1988,
- "Photodynamic therapy for the treatment of non-malignant disease," Session Chairman.
- International Congress on Applications of Lasers and Electro-Optics, 1988 [ICALEO'88], Santa Clara, CA, November, 1988,
- "Lasers in Medicine," Special Plenary Symposium, IEEE/Engineering in Session Chairman.
- Medicine and Biology Society, New Orleans, LO, November, 1988,
- "Photodynamic Therapy Tutorial," Plenary Symposium, 8th Congress of the Session Chairman.
- International Society for Laser Surgery and Medicine, Taipei, Republic of China, November 1989,
- "Biostimulation II," 8th Congress of the International Society for Laser Session Chairman.
- Surgery and Medicine, Taipei, Republic of China, November 1989,
- "Medical Lasers and Systems," OE\*LASE '92 (SPIE), Conference Chair
- Los Angeles, CA, January 1992,
- "OEC - 1992," SPIE Midwest Engineering Conference Session Chairman.
- Chicago, IL, March, 1992,
- "Dental Lasers: The Future is Now," Loyola University School of Program Organizer.
- Dentistry Alumni Association, Chicago, IL, March, 1992,
- "Biostimulation," American Society for Laser Surgery and Medicine, Session Chairman.
- 11th International Congress, Orlando, FL, May, 1992,
- "Medical Lasers and Systems II," and "Laser Biostimulation" Conference Chair.
- OE\*LASE '93 (SPIE), Los Angeles, CA, January
- OE\*LASE '93 (SPIE) Professional Advancement Courses
- (1) "Characteristics of Medical Lasers and Systems," Session Chairman
- (2) "Dental Lasers" Session Chairman
- "Introduction to Laser Dentistry" University of Illinois School of Co-Chair.
- Dentistry at Chicago, Chicago, IL, March 1993,
- "Medical Lasers and Systems III," OE\*LASE '94 (SPIE), Conference Chair.
- Los Angeles, CA, January 1994,
- "OE\*LASE '94 (SPIE) Professional Advancement Courses
- (1) "Characteristics of Clinical Lasers and Systems," Session Chairman
- (2) "Dental Lasers" Session Chairman
- (3) "Laser Diode Product Development for Medical Applications" Session Chairman
- "Clinical Laser and Optoelectronic Systems" Photonics West '95, Conference Chair
- Biomedical Optics (SPIE): San Jose, CA, February 1995
- "Now for Something Completely Different," Plenary Session Chair
- Biomedical Optics (SPIE): San Jose, CA, February 1995
- "Lasers in Dermatology and Plastic Surgery." Co-Chair
- BIOS '96 (SPIE) San Jose, CA, February 1997.
- "New Devices" Section Chair
- 17th Annual Meeting of ASLMS, Phoenix, AZ, April 1997
- "Silly Session," Assoc Res in Otolaryngology 29<sup>th</sup> Annual Meeting Co-Chair
- Baltimore, MD, February, 2006

**SCIENTIFIC / MEDICAL CONFERENCES AND WORKSHOPS  
Physician Continuing Medical Education Training Programs**

**Wenske Laser Center - Midwest Bio-Laser Institute**

"Conference on Lasers in Surgery and Medicine" 06/85.	Conf. Chairman
"Laser Applications in Podiatry and Cutaneous Disease." 14 courses 03/86 - 11/90	Co-Chairman
"Lasers in Dentistry: 1987 and the Future." 04/87.	Organizer
"Medical Laser Workshop in Gynecology and General Surgery." 13 courses 03/87 - 12/90.	Co-Organizer, Laboratory Director
"Applications of Lasers in Dermatology." 05/87.	Co-Organizer
"Laser Applications for Operating Room Personnel." 20 courses 09/88-12/90.	Co-Director
"Laser Laparoscopic Cholesystectomy." 10 courses 02/90-12/90	Course Director
"Experimental Applications of Lasers in Otolaryngology-HNS" 09/87.	Chairman
"Laser Angioplasty and Balloon Dilatation." 01/89, 03/89, 04/89, 06/89.	Course Director
"Laser Applications in the Treatment of Human Papilloma Virus Lesions." 04/89	Organizer
"Laser-Assisted Balloon Angioplasty and Laser Tissue Welding." 8/89	Course Director

**Laser Institute of America Training Courses**

"Medical Laser Principles for Biomedical Engineers." 05/87.	Program Director
"Lasers in Gastroenterology" 07/87,07/88. Director	Program
"Lasers in Urology" 04/88	Program Director
"Lasers in General Surgery" 10/88	Program Director
"Lasers in Dentistry" Professional Advancement Courses, 10/92	Instructor

**Midwest Laser Institute**

"Holmium and CO <sub>2</sub> Lasers in Arthroscopic Surgery" 6/91	Program Director
"KTP/YAG Laser in Advanced Laparoscopic General Surgery" 7/91 Director	Program
"KTP/YAG Laser in Otorhinolaryngology" 7/91	Program Director
"Current Laser Applications in Gastroenterology" 10/91,10/92,10/93	Program Director
"Current Laser Applications for Dentistry" 11/92,4/93	Program Director

**Bio-Medical Consultants**

"Nd:YAG and CO <sub>2</sub> Lasers in Surgery" 9/90,12/90,02/91,06/91	Program Director
"Holmium:YAG Laser in Orthopedic Surgery" 10/91,03/92,04/92	Program Director
"Indications for Lasers in Surgery and Medicine" 11/92	Program Chair
"Cosmetic Laser Surgery: Facial Resurfacing." Toronto, Canada, 06/96.	Program Director

**CONTACT INFORMATION**

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