

CURRICULUM VITAE

PETER RANDOLPH LICHTENTHAL, M.D.

Professor

Department of Anesthesiology
The University of Arizona College of Medicine
Tucson, AZ
Revised 9/2016

EDUCATION AND MEDICAL TRAINING

- 1967 **B.A.**
University of Vermont
Burlington, VT
- 1972 **M.D.**
New York Medical College
New York, NY
- 1972-1973 **Rotating Internship**
Hartford Hospital
Hartford, CT
- 1973-1974 **Junior Assistant Resident in Anesthesia**
Peter Bent Brigham Hospital
Boston, MA
- 1974-1974 **Resident in Anesthesia**
Peter Bent Brigham Hospital
Boston, MA
- 1975-1976 **Clinical Fellow in Anesthesia**
Peter Bent Brigham Hospital
Boston, MA
- 1975-1976 **Research Fellow in Anesthesia (Cardiology)**
Harvard Medical School
Boston, MA
Under the direction of Michael Lesch, M.D.
Levine Cardiac Unit, Peter Bent Brigham Hospital,
Boston, MA

MILITARY SERVICE

- 1976-1978 Lieutenant Commander, Medical Corps, U.S. Navy (LCDR MC USNR),
Department of Anesthesiology, National Naval Medical Center
Bethesda, MD. Presidential Medical Team, Anesthesiologist, 1977-78

MEDICAL LICENSES

4/1978-7/2011 Illinois (036-056704)
5/1995-Present Arizona (23120)

SPECIALTY CERTIFICATION

4/1977-Present American Board of Anesthesiology (8166)

EMPLOYMENT

1976-1978 **General Medical Officer**
USS Trenton, LPD-14, 6th Fleet,
Mediterranean

1978-1984 **Associate Attending**
Northwestern Memorial Hospital
Chicago, IL

1978-1995 **Assistant Professor of Clinical Anesthesia**
Northwestern University Medical School
Chicago, IL

1983-1989 **Scientific Advisor in Clinic Research**
Janssen Pharmaceutical
Chicago, IL

1985-199 **Director of Cardiovascular Anesthesia**
Northwestern Memorial Hospital
Chicago, IL

1989-1998 **Assistant Medical Director, United Blood Services**
Northwestern Memorial Hospital Rube Walker Donor Center
Chicago, IL

1995-1999 **Associate Professor of Clinical Anesthesia**
Northwestern University Medical School
Chicago, IL

1996-2006 **Associate Professor of Clinical Anesthesia**
The University of Arizona College of Medicine, University Physicians Healthcare
Tucson, AZ

2005 **Acting Medical Director, Perioperative Services**
University Medical Center
Tucson, AZ

2006-Present **Professor of Clinical Anesthesiology**
The University of Arizona College of Medicine
Tucson, AZ

HONORS

1967 Honor Thesis "The Civil War and Surgeon General William A. Hammond"
University of Vermont
Burlington, VT

MEMBERSHIPS AND SOCIETIES

1972 American Society of Anesthesiologists
1979 International Anesthesia Research Society
1980-2015 Society of Cardiovascular Anesthesiologists
1997 Society for Technology in Anesthesia
1997 Association of University Anesthesiologists
1999 Arizona Society of Anesthesia
2000 Society of Critical Care Medicine
2014 European Society of Anesthesiologists
2016 American Academy for Cerebral Palsy and Developmental Medicine (Fellow)

HONORARY MEMBERSHIPS

1997-Present Association of University Anesthesiologists

SERVICE AND OUTREACH

1980-1999 **Member**
Northwestern University Institutional Review Board
Chicago, IL
1984-1987, 1993 **Member**
Hospital Product Evaluation Committee, Northwestern University Medical School
Chicago, IL
1984-1999 **Chairman**
Northwestern University Institution Review Board
Chicago, IL
1989-1993 **Member**
Medical Advisory Board, Life Source Blood Services
Glenview, IL
1993-1998 **Member**
Medical Advisory Board, United Blood Services,
Chicago, IL

Peter Randolph Lichtenthal, M.D.
Curriculum Vitae

- 1999-2010 **Member**
Human Subjects Committee, University of Arizona
Tucson, AZ
- 2000, 2007, 2014 **Member**
Academic Program Review Committee, University of Arizona
Tucson, AZ
- 2000-Present **Affiliate Member in Anesthesia**
Children's Clinic for Rehabilitation Services
Tucson, AZ
- 2004-Present **Member**
Sarver Heart Research Center
Tucson, AZ
- 2004-2013 **Member**
Operating Room Products Committee, Banner University Medical Center
Tucson, AZ
- 2005-2009 **Member**
American Society of Anesthesiologists Operating Room Committee
- 2007-2008 **Corporate Liaison**
Meeting Planning Committee, Society for Technology in Anesthesia
- 2010-Present **Chairman**
Human Subjects Medical Committee, University of Arizona
Tucson, AZ
- 2010-2013 **Affiliate Attending Anesthesiology**
Southern Arizona Veterans Administration Hospital
Tucson, AZ
- 2013-Present **Member**
Hospital Pharmacy and Therapeutics Committee, Banner University Medical Center
Tucson, AZ
- 2014 **Seminar Chairman**
Arizona Society of Anesthesiologists Annual Meeting
Scottsdale, AZ
- 2015-Present **Member**
Executive Review Committee (Research), University of Arizona
Tucson, AZ
- 2015 **Poster Judge**
Western Anesthesia Residents Conference
Seattle, WA
- 2016 **Chairing**
Arizona Society of Anesthesiologists Annual Scientific Meeting
Scottsdale, AZ

GRADUATE STUDENT TEACHING

2016 Student Andi Encinas
 Master of Public Health
 Thesis Internship Review Committee
 University of Arizona College of Public Health

PUBLICATIONS AND CREATIVE ACTIVITY

BIBLIOGRAPHY

1. **Lichtenthal PR**: Preoperative evaluation and intraoperative management of cardiac surgical patients. CRITICAL CARE OF SURGICAL PATIENTS, edited by John Beal, The MacMillan Company, New York, January, 1982.
2. **Lichtenthal PR**, Wilkinson CJ: Anesthetic Management of Patients Undergoing Coronary Artery Bypass Surgery. CORONARY ARTERY BYPASS SURGERY: APPLICATION OF NEW TECHNOLOGIES, edited by Arthur J. Roberts, Year Book Medical Publishers, Chicago, IL, chap. 9, pp 143-151, June, 1982.
3. Rossi EC, **Lichtenthal PR**, Michaelis LL, Fung HH: Nitroglycerin, Prostacyclin, and Platelet Function. PROSTAGLANDINS IN CLINICAL MEDICINE, edited by Kenneth K. Wu and Ennio C. Rossi, Year Book Medical Publishers, Chicago, IL, June, 1982.
4. Roberts AJ, **Lichtenthal PR**, Spies SM, Sanders JH et al: Perioperative Myocardial Damage in Coronary Artery Bypass Graft Surgery: Analysis of Multifactorial Etiology and Evaluation of Diagnostic Techniques Surgery for the Complications of Myocardial Infarction, edited by John M. Moran and Lawrence L. Michaelis, Grune & Stratton, New York, 1980.
5. Perspectives in Critical Care, edited by F.B. Cerra, Bobo D, Downs JB, **Lichtenthal PR**, Weled B: Does Technology Drive Clinical Practice or Does Clinical Practice Drive Technology? Quality Medical Publishers Clinical Series, Vol. 3-(1), 1990.
6. **Lichtenthal PR**, Editor: Monitoring and Equipment. Current Opinions in Anesthesiology, Vol. 9, No 6, December 1996, Rapid Science Publishers, 489-510.
7. **Lichtenthal PR**, Editor: Quick Guide to Cardiopulmonary Care. Baxter Healthcare Corp., 1998, Revised 2002.
8. Shapiro BA, **Lichtenthal PR**: Post-operative respiratory management. Cardiac Anesthesia, Edited by Kaplan et al. WB Sanders Company, Philadelphia, 1999.

ORIGINAL CONTRIBUTIONS

1. **Lichtenthal PR** and Roberts RB: The effect of volatile anesthetic agents upon the conductivity of anesthesia circuits. Anesth & Analg. 52:121-124, 1973.
2. **Lichtenthal PR**, Philip J, Sloss LJ, Gabel R, and Lesch M: Administration of nitrous oxide in normal subjects. Chest 72: 315-322, 1977.

3. Roberts AJ, Spies SM, **Lichtenthal PR**, Moran JM: FACS: Multi-dose hypothermic potassium cardioplegia: clinical study of the relationship between continuous aortic cross-clamp and left ventricular performance. *Surgical Forum* 30: 55-257, 1979.
4. Robert AJ, Spies SM, Meyers SN, Moran JM, Sanders JH, Jr., **Lichtenthal PR**, Michaelis LL: Early and long-term improvement in left ventricular performance following coronary bypass surgery. *Surgery* 88: 467-475, 1980.
5. Roberts AJ, Spies SM, Sanders JH, Moran JM, Wilkinson, CJ, **Lichtenthal PR**, et al: Serial assessment of left ventricular performance following coronary artery bypass grafting: early postoperative results with myocardial protection afforded by multi-dose hypothermic potassium crystalloid cardioplegia. *J. Thorac Cardiovasc Surg* 81: 69-84, 1981.
6. **Lichtenthal PR**, Katele G, Holley, HS: Unusual case of recovery room air pollution. *Anesth Anal* 59:71, 1980.
7. Roberts AJ, Sanders JH, Moran JM, Kaplan KJ, **Lichtenthal PR**, Spies SN1, Michaelis LL: Non-randomized matched pair analysis of intermittent ischemia arrest vs. potassium crystalloid cardioplegia during myocardial revascularization. *Ann. Thorac. Surg.* 31: 502-511, 1981.
8. Moran JM, Kehoe RR, Loeb JM, **Lichtenthal PR**, Sanders H, Michaelis LL: Extended endocardial resection for the treatment of ventricular tachycardia and ventricular fibrillation. *Ann Thorac Surg* 34:538-552, 1982.
9. Roberts RJ, Moran JM, Sanders JH, Spies, SM, **Lichtenthal PR**, Kaplan K, Michaelis L: Clinical evaluation of the relative effectiveness of multi-dose crystalloid and cold blood potassium cardioplegia in coronary artery bypass surgery: A non-randomized match pair analysis. *Ann Thorac Surg* 33: 421-433, 1982.
10. **Lichtenthal PR**, Loeb JM, Sanders JH: Nifedipine and Angina study. Letter to the Editor, *N Eng J Med* 307:627, 1982.
11. Roberts AJ, Spies SM, **Lichtenthal PR**, Moran JM, Sanders JH, Michaelis LL: Changes in left ventricular performance related to perioperative myocardial infarction in coronary artery bypass graft surgery. *Ann Thorac Surg* 35: 5 16-524,1983.
12. Roberts AJ, **Lichtenthal PR**, Spies SM, Kaplan KJ: Analysis of perioperative myocardial damage during coronary artery bypass surgery. *Ann Thorac Surg* 35: 516-524, 1983.
13. **Lichtenthal PR**, Collins JT: The multipurpose pulmonary artery catheter: its use in intra-operative ECG monitoring and intra-aortic balloon pump triggering. *Ann Thorac Surg* 36: 493, 1983.
14. **Lichtenthal PR**, Wade LD, Niemyski PR, Shapiro BA: Respiratory management following cardiac surgery with inhalation anesthesia. *Crit Care Med* 11: 603-605, 1983.
15. Malan TP, Nolan PE, **Lichtenthal PR**, Polson JS, Tebich SL, Rose RK, Copeland JG: Severe refractory hypotension during anesthesia in a patient on chronic clompiramine therapy. *Anesthesiology*, 2001, 95:264-6.
16. Loeb JM, **Lichtenthal PR**, deTarnowsky JM: Parasympathetic effects of Fentanyl on the canine sinus node. *J Autonom Nerv Syst* 11:91-94, 1984.

17. **Lichtenthal PR**, Rossi EC, Louis G, Rehnberg KA, Wade D, Michaelis L, Fung H-L, Patrignani P: Dose-related prolongation of the bleeding time by intravenous nitroglycerin. *Anesth Analg* 64: 30-33, 1985.
18. Kinzer JB, **Lichtenthal PR**, Wade LD: Loss of radial artery pressure trace during internal mammary artery dissection for coronary artery bypass graft surgery. *Anesth Analg* 64: 1134-1136, 1985.
19. **Lichtenthal PR**, Wade LD, Rossi EC: The effect of Ketanserin on blood pressure and platelets during cardiopulmonary bypass. *Anesth Analg* 66: 1151-54, 1987.
20. Goodnough LT, Johnson MF, Pearl CT, Transfusion Medicine Academic Award Group (**Peter R. Lichtenthal**): The variability of transfusion practice in coronary artery bypass surgery, *JAMA* 265: 1, 86-90, 1991.
21. Peruzzi WT, Pavlar MA, **Lichtenthal PR**, *et al*: A clinical evaluation of a blood conservation device in medical intensive care patients. *Critical Care Medicine* 21: 501-506, 1993.
22. Shapiro BA, **Lichtenthal PR**: Inhalational based anesthetic techniques are the key to early extubation of the cardiac surgical patient. *Journal of Cardiothoracic and Vascular Anesthesia*. 7: 135-136, (Editorial) 1993.
23. Ahmad S, **Lichtenthal PR**: Anesthetic management of a patient with a single ventricle and modified Fontan procedure. *Journal Cardiothoracic and Vascular Anesthesia*, 7: 727-729, 1993.
24. **Lichtenthal PR**, Wade L: Continuous cardiac output measurement: an example of clinical utility. *Journal Cardiothoracic and Vascular Anesthesia*, Vol 8, No. 6 668670, 1994.
25. Peruzzi WT, Noskin GA, Moen S, **Lichtenthal PR**: Microbial contamination of blood conservation devices during routine use in the critical care setting: results of a prospective randomized trial. *Crit Care Med*, Vol. 24, No 7, 1157-1162, 1996.
26. **Lichtenthal PR**, Gordon D: Testing the Safety of Baxter's New Continuous Cardiac Output Monitoring System. *Journal of Clinical Monitoring* Vol. 12, No 3, 243-249, 1996.
27. Malan TP, Nolan PE, **Lichtenthal PR**, Polson JS, Tebich SL, Bose RK, Copeland JG: Severe refractory hypotension during anesthesia in a patient on chronic clomipramine therapy. *Anesthesiology*, Vol 95, No 1, Jul 2001.
28. Phillips R, **Lichtenthal PR**, Sloniger J, Burstow D, West M, Copeland J: Noninvasive cardiac output measurement in heart failure subjects on circulatory support. *Anesthesia Analg*, 2009 Mar;108(3):881-6. Doi: 10.1213/ane.0b013e31893174b. PMID: 19224797.
29. **Lichtenthal PR**, Maul D, Borg U: Do endotracheal tubes prevent microaspiration? *British Journal of Anesthesiology* 2011 Nov;107(5):821-2. Doi: 10.1093/bja/aer312. PMID: 21997161.
30. **Lichtenthal P**, Borg U, Lockett W: Does Endotracheal Tube Design Affect Cuff Seal, Safety, and Subglottic Suction Performance? *International Journal of Anesthesiology and Research*, 3(10), 166-171, November 2015. EPub.

ABSTRACTS (Peer Reviewed)

1. Roberts AJ, Spies SM, White R, **Lichtenthal PR**, Wilkinson CJ, Sanders JH, *et al*: Evolution of changes in left ventricular performance after myocardial revascularization utilization hypothermic potassium cardioplegia. *Surgical Research Society, The Society of University Surgeons, 4th Meeting, July, 1979.*

Peter Randolph Lichtenthal, M.D.
Curriculum Vitae

2. Roberts AJ, Wilkinson CJ, Spies SM, **Lichtenthal PR**, Morgan JM, Sanders JH, et al: Hemodynamic effects of abdominal aortic cross clamping. Surgical Research Society, July, 1979.
3. Wilkinson CJ, DeBoer D, Adams AL, Wade L, **Lichtenthal PR**, Brunner EA: Rising cost consciousness in anesthesia. *Anesthesiology* 51: 5353, 1979.
4. Roberts AJ, Spies SM, Meyers SN, Morgan JM, Sanders JH, **Lichtenthal PR**, et al: Early and long-term improvement in left ventricular performance following coronary bypass surgery. Presented at Central Surgical Association Meeting, St. Louis, MO, March, 1980.
5. Perry D, **Lichtenthal PR**: Arterial oxygen changes during internal jugular placement of pulmonary artery catheters. Presented at Midwest Anesthesia Residents' Conference, Columbia, MO, March, 1991.
6. **Lichtenthal PR**, Wade LD, Niemyski PR, Shapiro BA: A re-evaluation of respiratory management following open heart surgery. Presented at 3rd Annual Meeting of Society of Cardiovascular Anesthesiologists, San Francisco, CA, 1981.
7. **Lichtenthal PR**, Wade LD, Lesch M: Blood pressure in patients undergoing coronary revascularization. Presented at 3rd Annual Meeting of Society of Cardiovascular Anesthesiologists, San Francisco, CA, 1981.
8. **Lichtenthal PR**, Rossi EC, Louis G, Rehnberg K, Wade LD, Michaelis LL, Fung HL: Bleeding time and platelet aggregation following nitroglycerin. *Anesthesiology* 55: 3A - A17, 1981.
9. Collins JT, **Lichtenthal PR**: A temporary triggering technique during counter-pulsation. Presented at AAMI Annual Meeting and Exhibit Program, May, 1982.
10. **Lichtenthal PR**, Loeb J, Moran J, Kehoe R: Anesthetic Experience in 43 consecutive patients treated surgically for drug-refractory ventricular arrhythmias. Presented at 1982 Annual Meeting, Society of Cardiovascular Anesthesiologists, Washington, D.C., 1982.
11. Demczuk R, **Lichtenthal PR**: Airway evaluation utilizing computerized tomography. Presented at Midwest Anesthesia Residents' Conference, Chicago, IL, 1982.
12. Kehoe RF, Moran JM, Loeb JM, Zheutlin T, **Lichtenthal PR**, Sanders JH, Michaelis LL: Extended endocardial resection for treatment for out-of-hospital ventricular fibrillation. *Circulation* 66 (Suppl. II): 344, 1982.
13. **Lichtenthal PR**, Rossi EC, Louis G, Rehnberg KA, Wade LD, Michaelis LL: Dose related prolongation of the bleeding time by intravenous nitroglycerin. *Circulation* 68: (Suppl. 111), 1983.
14. **Lichtenthal PR**, Wade LD, Rossi EC: The use of Ketanserin for treating hypertension during cardiopulmonary bypass. 10th Scientific Meeting of the International Society of Hypertension, Zurich, 1984.
15. Collins JT, Wade LR, **Lichtenthal PR**: The use of a rationale database in upgrading cardiac anesthesia sequential files. A Technical Poster Session, AAMI Annual Meeting and Exhibit Program, Boston, MA, 1985.
16. Wong HY, **Lichtenthal PR**, Wade LD: The effect of anesthetic techniques on perioperative fluid requirement during coronary artery bypass surgery. *Anesth Analg* 65: 169, 1985.

17. **Lichtenthal PR**, Wade LD: The effect of Ketanserin on blood pressure and platelet function during cardiopulmonary bypass. Postgraduate Assembly, New York State Society of Anesthesiologists, New York, 1986.
18. Wade LD, Weis HW, McCune MD, Greene SJ, **Lichtenthal PR**: Activated clotting time Measurements: How much waste should be drawn from a continuously flushed-heparinized line to insure accurate results? *Anesthesiology* Vol. 69, #3A (Suppl.) A-260, September, 1988.
19. **Lichtenthal PR**, Rossi EC, Wade LD: Control of Blood pressure after coronary Artery bypass surgery: a placebo controlled study. *Anesthesiology* 71: A67,1989.
20. Bennett H, **Lichtenthal PR**, Shanks C: Predictors of difficult radial artery cannulation. *Anesthesiology*. 73, AIII, 1990.
21. Brown R, **Lichtenthal PR**: Utilization of Muscle relaxants, a cost analysis. *Anesthesiology*. 73 : A 1088, 1990.
22. **Lichtenthal PR**, Dauber M, Wade L: Clinical Laboratory: Is it time for another look? Poster Presentation, 44th Post Graduate Assembly. New York State Society of Anesthesiologists, New York, 1990.
23. Peruzzi WT, Blake MJ, Parker M, Shapiro BA, **Lichtenthal PR**: Clinical evaluation of the venous arterial blood management system. *Anesthesiology*, 1991.
24. Peruzzi WT, Blake MJ, Parlar M, Shapiro BA, **Lichtenthal PR**, Tohy B, Davison R: Clinical evaluation of the venous arterial blood management system. *Anesthesiology*, 75: A474, 1991.
25. **Lichtenthal PR**, Marchand G, *et al*: A safety comparison between a new continuous cardiac output monitoring system and a standard pulmonary artery catheter in sheep. *Anesthesiology*, Vol. 77: A473, 1992.
26. **Lichtenthal PR**, Wade LD: Clinical evaluation of a continuous cardiac output system in post-op cardiac surgical patients. *Critical Care Medicine*, _21: 5214, 1993.
27. **Lichtenthal PR**, Wade LD: Accuracy of the Vigil nce/Intellicath continuous cardiac output system during and after cardiac surgery. *Anesthesiology*, 79:A474, 1993.
28. Peruzzi WT, Moen S, **Lichtenthal PR**, Noskin G, Yungbluth M: Bacterial contamination of blood conservation devices. *American College of Chest Physicians*, October, 1994.
29. Peruzzi WT, Moen S, **Lichtenthal PR et al**: Bacterial and fungal contamination of blood conservation devices in ICU patients. *Anesthesiology*, 81: A582, 1994.
30. **Lichtenthal PR**, Wade L: Clinical evaluation of the vigilance continuous cardiac output/SvO2 monitoring system in cardiac surgical patients. *Anesthesiology*, 81:A517, 1994.
31. **Lichtenthal PR**, Stautzenbach AM, Wade LD, Shapiro BA: Perioperative Cardiac Anesthesia and Early Extubation: The Keys to Decreasing cost in the Cardiac Surgery I.C.U. *Anesthesiology*, Vol 83, No 3A, A1093, 1995.
32. **Lichtenthal PR**, Wade LD: Evaluation of signal extraction technology in preventing false alarms when using pulse oximetry in the recovery room. *Anesth Analg*, Vol 82, No 2S, S278, 1996.

33. **Lichtenthal PR**, Nguyen Q: Maximum flow rates through triple lumen central venous catheters - who has the highest flow? American Society of Critical Care Anesthesiologists, San Diego, CA. Oct. 17, 1997 (Invited).
34. **Lichtenthal PR**, Isaac RM, Shapiro BA, Wade LD: The clinical experience program: a collaborative effort to provide a manufacturer of anesthesia related products with a better understanding of the operating room environment. *Anesthesiology*, Vol .87, No 3A, Sep, 1997.
35. **Lichtenthal PR**, Wade LD: Evaluation of the VIA blood gas and chemistry monitor used on patients undergoing cardiac surgery. American Society of Anesthesiologists Annual Meeting, Orlando, FL, Oct. 19, 1998. *Anesthesiology*, Vol. 89, No 3A, A566, Sep, 1998.
36. **Lichtenthal PR**, Wade LD: Evaluation of the VIA blood gas and chemistry monitor used on patients undergoing cardiac surgery. European Society of Intensive Care Medicine, Stockholm Sweden, Sep 6-7, 1998. *Intensive Care Medicine*, Vol. 24, Suppl. 1, 1998, p. 31.
37. **Lichtenthal PR**, DeWolf A: A multi-functional venous access device: a new answer to an old problem? Society of Critical Care Annual Meeting, San Francisco, CA, Jan 23-27, 1999. *Critical Care Medicine*, Vol. 27, No 1.
38. **Lichtenthal PR**, DeWolf A: A multi-functional venous access device: a new answer to an old problem? International Anesthesia Research Society Annual Meeting, Los Angeles, CA, Mar 12-16, 1999. *Anesthesia-Analgesia*, Vol. 88, No 2S,P S 124, 1999.
39. **Lichtenthal PR**, Jacob A: The Baxter central venous oligon catheter: a safe and effective alternative to chlorhexidine? International Anesthesia Research Society Annual Meeting, Los Angeles, CA, Mar 12-16, 1999. *Anesthesia-Analgesia*, Vol.88, No2S, PS125, 1999.
40. **Lichtenthal PR**, DeWolf A: A.V.A.: A novel approach to venous access, 19th International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium, March 16-19, 1999, *Critical Care*, Vol. 3, suppl 1, p.30, 1999.
41. **Lichtenthal PR**, Barker, SJ: An Evaluation of Pulse Oximetry-Pre, During and Post-Cardiopulmonary Bypass 2002 Annual Meeting of the American Society of Anesthesiologists The Journal of the American Society of Anesthesiologists, Inc. October 15, 2002.
42. **Lichtenthal PR**, Borg UR: truCCOMS – an accurate system for cardiac output measurement? *Anesthesia Analgesia* suppl. 140 March 2003.
43. Loeb RG, **Lichtenthal PR**, Zane D: Use of a human patient simulator to evaluate and solve a clinical equipment problem. 2003 Annual Meeting of the American Society of Anesthesiologists October 13, 2003, San Francisco, CA. Abstract won Best Use of Simulation to Advance Anesthesia Technology.
44. **Lichtenthal PR**, Borg UR: The modified Donovan mock circulation – A viable model for testing Cardiac output devices? 2003 Annual Meeting of the American Society of Anesthesiologists October 13, 2003, San Francisco, CA.
45. **Lichtenthal PR**: Arrow MAC versus AVA HF – Different designs, different safety? 2003 Annual Meeting of the American Society of Anesthesiologists October 13, 2003, San Francisco, CA.
46. Redford D, Barker S, **Lichtenthal PR**: Evaluation of two forehead reflectance oximeter in intraoperative surgical patients. Society of Technology in Anesthesia Annual Meeting

January 15-17, 2004, Albuquerque, NM.

47. **Lichtenthal PR**, Loeb R, Morgan S: 8500 Poet IQ – An accurate anesthesia gas monitor? International Anesthesia Research Society Annual Meeting, March 28, 2004, Tampa, FL.
48. Redford D, **Lichtenthal PR**, Barker S: Interoperative perfusion changes at two pulse oximetry monitoring sites. International Anesthesia Research Society Annual Meeting, March 28, 2004, Tampa, FL.
49. Redford D, **Lichtenthal PR**, Barker S, Evaluation of nares as a site for oximetry monitoring in interoperative surgical patients: International Anesthesia Research Society Annual Meeting, March 28, 2004, Tampa, FL. *Anesth Analg* 2004; 98; S-94.
50. Redford D, **Lichtenthal PR**, Barker S: Evaluation of ear transmissions and forehead reflectance oximetry in interoperative surgical patients. International Anesthesia Research Society Annual Meeting, March 28, 2004, Tampa, FL.
51. **Lichtenthal PR**, Loeb R, Morgan S: 8500 Poet IQ – An accurate anesthesia gas monitor? World Congress of Anesthesiologists, April 22, 2004, Paris, France.
52. Redford D, **Lichtenthal PR**, Barker S: Interoperative perfusion changes at two pulse oximetry monitoring sites: The digit vs. the nare. World Congress of Anesthesiologists, April 22, 2004, Paris, France. *Anesth Analg* 2004; 98; S-93.
53. Redford D, **Lichtenthal PR**, Barker S: Evaluation of nares as a site for oximetry monitoring in interoperative surgical patients. International Anesthesia Research Society Annual Meeting, World Congress of Anesthesiologists, April 22, 2004, Paris, France.
54. Redford D, **Lichtenthal PR**, Barker: Evaluation of ear transmissions and forehead reflectance oximetry in interoperative surgical patients, World Congress of Anesthesiologists, April 22, 2004, Paris, France.
55. Redford D, **Lichtenthal PR**, Barker S: An intraoperative comparison of ear transmission and forehead reflectance oximetry in in pediatric surgical patients, American Society of Anesthesiologists' Annual Meeting, Las Vegas, 2004. *Anesth Analg* 2004; 98; S-92.
56. Redford D, **Lichtenthal PR**, Barker S: Evaluation of 2 forehead reflectance oximeter in pediatric intraoperative surgical patients, American Society of Anesthesiologists' Annual Meeting, Las Vegas, NV, 2004.
57. Redford D, **Lichtenthal PR**, Barker S: A clinical comparison of pulse oximeter sensor sites in Pediatric surgical patient: ear, nose, lip and forehead, American Society of Anesthesiologists' Annual Meeting, Las Vegas, NV, 2004.
58. Redford D, **Lichtenthal PR**, Barker S: Evaluation of the tongue and hard palate as alternative sites for the reflectance pulse oximetry monitoring in difficult to monitor surgical patients, Society of Technology in Anesthesiology Annual Meeting, Miami, FL, 2005.
59. Redford D, **Lichtenthal PR**, Barker, S: Evaluation of alternative pulse oximeter monitoring sites for the difficult to monitor surgical patient, IARS Annual Meeting, Hawaii, 2005. *Anesth Analg* 2005;100: S-213.
60. Redford D, **Lichtenthal PR**, Barker, S: Impact of headbands on performance of 2 forehead reflectance oximeters on difficult to monitor surgical patients, IARS Annual Meeting,

Hawaii, 2005. *Anesth Analg* 2005; 100; S-214.

61. **Lichtenthal PR**, Phillips R, Sloniger J, Copeland J: USCOM an accurate system for cardiac output management? 25th International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium, 2005.
62. **Lichtenthal PR**, Phillips, R Sloniger J, Copeland J: USCOM an accurate system for cardiac output management? American Society of Anesthesiologist Annual Meeting October 2005.
63. Phillips R, Hood S, Jacobson B, **Lichtenthal PR**, Burstow D, West M, May C: Measurement of CO by flow probe, USCOM and CCO in conscious sheep at rest and after Dobutamine. Medical Oral Poster Session ANZICS/ACCN 30th Australian Society Meeting October 21, 2005.
64. Phillips R, Hood S, Jacobson B, **Lichtenthal PR**, Burstow D, West M, May C: Measurement of CO by flow probe, USCOM and PAC in conscious sheep at rest and after Dobutamine. International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium, March 2006.
65. Phillips R, **Lichtenthal PR**, et. al: Non-invasive cardiac output measurement in children and adults in the cardiac surgical environment. European Society of Intensive Care Medicine, 19th Annual Congress, Barcelona, Spain, September 2006.
66. **Lichtenthal PR**, Phillips R, Sloniger J, Copeland J: USCOM-Non invasive Doppler-Are cardiac output measurements accurate in both infants and adults? American Society of Anesthesiologists Annual Meeting October 2006.
67. **Lichtenthal PR**, Copeland JG: Cardiac output determination by continuous wave Doppler in perioperative pediatric heart surgery. *Crit Care Med* 2006; Vol 34, No. 12 (Suppl.).
68. Phillips R, **Lichtenthal PR**, et. al: Non-invasive cardiac output: Myth or reality? Doppler technique. American Society of Anesthesiologists Annual Meeting October 2007.
69. **Lichtenthal PR**, et al: USCOM Non-invasive Doppler cardiac output-are measurements accurate in infants and children? American Society of Anesthesiologists Annual Mtg October 2007.
70. **Lichtenthal PR**, et al: Does desflurane or sevoflurane modify the response of ischemic myocardium to propofol? American Society of Anesthesiologists Annual Meeting October 2008.
71. **Lichtenthal PR**, Tinker F, Borg, U: truCCOMS-Realtime CCO? American Society of Anesthesiologists Meeting October 2008.
72. **Lichtenthal PR**, Warner T, Morgan S, Redford D: Central line securing devices: Has progress been made? American Society of Anesthesiologists Annual Meeting October 2008.
73. Brainerd T, **Lichtenthal PR**, Wade L: Testing accuracy and reliability of the TruCCOMS cardiac output system. Western Anesthesiology Residents Conference, Palm Springs, 2009.
74. **Lichtenthal PR**, Borg U, Maul D: Do endotracheal tubes prevent microaspiration? International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium March 2010.
75. Butler T, **Lichtenthal PR**: Factor 7 and lung transplantation; it's not what it seems. Western Anesthesia Residents Conference, Anaheim, CA, 2010.
76. **Lichtenthal PR**, Batchelder, P: Comparison of Endotracheal Tube Intrinsic Suction Rates and Cuff Seal Performance. *Crit Care Med* 2010 Vol. 38. no.12 (suppl.) p. 361.

77. **Lichtenthal PR**, Borg U: Endotracheal (ETT) cuff pressure-the role of tracheal size and cuff volume. International Symposium on Intensive Care and Emergency Medicine March, 2011.
78. Howell SG, Badal JJ, Jacobsen WK, **Lichtenthal PR**: Impact of a national tragedy on residency recruitment. American Society of Anesthesiologists Annual Meeting October 2011.
79. **Lichtenthal PR**, Wood L, Wong A, Borg U: Pressure applied to tracheal wall by barrel and taper shaped cuffs. American Society of Anesthesiologist Annual Meeting October 2011.
80. Castoro C, **Lichtenthal PR**, Samson R, Barber B: Agitated blood is superior to agitated saline in detection of patent foramen ovale. Western Anesthesia Resident Conference Annual Meeting October 2013.
81. **Lichtenthal PR**: Poster Presentation-ISICEM : Does cost affect Endotracheal Tube Performance? Brussels, Belgium, March 18, 2014.
82. **Lichtenthal PR**, Marsh M, Encinas A: Conflict of Interest, A National Perspective. Prim&R Advancing Ethical Research Conference, Boston, MA, November 2015.
- 83.
84. **Lichtenthal PR**, Chan H, Valencia FG, Boyle PK: Do Peripheral Nerve Blocks in Pediatric Orthopedic Surgery Improve Post-Op Pain Control and Increase Satisfaction? American Society of Anesthesiologists Annual Meeting, Chicago, IL, October 2016.

MEDIA

1. Wade LD, **Lichtenthal PR**, Tuxen PL: Application of the programmable calculator in anesthesia. Scientific Exhibit presented at the 1981 American Society of Anesthesiologists' Annual Meeting, New Orleans, LA, 1981.
2. Wade LD, **Lichtenthal PR**: Application of the programmable calculator in anesthesia. Presented at Post Graduate Assembly, The New York State Society of Anesthesiologists. Inc., New York, 1981.
3. **Lichtenthal PR**, Loeb JM, Moran JM, Kehoe RF: Ventricular mapping: A new approach to arrhythmia control. Presented at the American Society of Anesthesiologists, Annual Meeting, Las Vegas, NV, 1982.
4. **Lichtenthal PR**, Loeb JM, Moran JM, Kehoe RF: Ventricular mapping: a new approach to arrhythmia control. Presented at the New York State Society of Anesthesiologists, Inc. Post Graduate Assembly, New York, 1982.
5. **Lichtenthal PR**, Loeb JM, Moran JM, Kehoe RF: Ventricular Mapping: a new approach to arrhythmia control. Presented at the Chicago Heart Association, Chicago, IL, 1983.
6. **Lichtenthal PR**, Wade LD: The effect of Ketanserin on blood pressure and platelet function during cardiopulmonary bypass. Presented at the Tenth World Congress of Cardiology, Washington, D.C., 1986.
7. Seckeler MD, Typpo K, Deschenes J, Samson R, **Lichtenthal PR**: Inaccuracy of a Continuous Arterial Pressure Waveform Monitor When Used for Congenital Cardiac Catheterization. Presented at the Pediatric and Adult Interventional Cardiac Symposium, Las Vegas, NV, 2015.

REVIEWER

1996-1997;
2003-Present For Anesthesia and Analgesia
Section: Cardiothoracic Anesthesia, Technology

CONFERENCES/SCHOLARLY PRESENTATIONS

5/2015 Aging: Physiologic Changes of the Elderly, Anesthetic Considerations
Department of Anesthesiology Resident Lecture
University of Arizona College of Medicine
Tucson, AZ

7/2015 Sleep Deprivation
Department of Anesthesiology Grand Rounds
University of Arizona College of Medicine
Tucson, AZ

1/2016 Human Subjects Lecture
Institutional Review Board
Northern Arizona University
Flagstaff, AZ

2/2016 Human Subjects Lecture
Institutional Review Board
Northern Arizona University
Flagstaff, AZ

3/2016 Sleep and Wellness
Department of Anesthesiology Grand Rounds
University of Arizona College of Medicine
Tucson, AZ

MEDICALLY CHALLENGING CASES

1. Brainerd T, Hafner DT, **Lichtenthal PR**: Unrecognized tracheoesophageal fistula leading to intraoperative arrest. Presented at the American Society of Anesthesiologists in New Orleans, LA, October 2009.
2. Peters EC, **Lichtenthal PR**: Anesthesia Management of Minimally Invasive Stereotactic Temporal Lobe Ablation for Intractable Epilepsy in Multiple Remote Anesthetic Locations. Presented at the American Society of Anesthesiologists, October, 2012.
3. Peters EC, **Lichtenthal PR**: Cell Saver Induced Sepsis and Death Following Aortic Valve Replacement. Presented at the American Society of Anesthesiologists, October, 2012.
4. Henderschedt S, **Lichtenthal PR**: Anesthetic Implications Following Repair of Complex Congenital Heart Disease. Presented at the Western Anesthesia Residents Conference in Albuquerque, NM, May, 2013.
5. Castoro C, **Lichtenthal PR**: Agitated Blood is Superior to Agitated Saline in the Detection of Patent Foramen Ovale. Presented at the Western Anesthesia Residents Conference in Albuquerque, NM, May 2013.

6. Record BC, **Lichtenthal PR**: Anesthetic Management of a Patient with Leigh's Disease in the Setting of WPW: A Case Report American Society of Anesthesiologists, October, 2015.
7. Helen Chan, Stoike D, **Lichtenthal PR**: Peripheral Nerve Blocks for Postoperative Pain Control in Pediatric Orthopedic Surgeries. Presented at the Western Anesthesia Residents Conference in San Francisco, CA, April 2016.

GRANT CONTRACTS: RESEARCH SUPPORT

- | | |
|-------------|---|
| 2001-2006 | Research grant for "An Observational Repeated Analysis of Different Manufacturers Pulse Oximeters Undergoing Cardiac Surgery Under Cardiopulmonary Bypass." \$6,000. |
| 2001-2005 | Support from Criticare for "Top Level of Beta Testing; CSI Poet Plus 8100 with 8500 Agent." \$27,455. |
| 2002-2004 | Pharmacia and Upjohn Company research grant for the "Clinical Protocol for a Double Blind Multi Center Study of the Safety and Efficacy of Parecoxiv followed by Valdecoxib Compared to Placebo for Treatment." \$50,000. |
| 2002-2005 | Proctor and Gamble Pharmaceuticals, Inc: Research grant for "A Phase III Randomized Double-blind, Placebo-Controlled Study of Pexellizumab on Total Mortality and Myocardial Infarction in Patients Undergoing Cardiopulmonary Bypass." \$64,400. |
| 2004-2006 | Research support for "Evaluation of Clevelox in the Perioperative Treatment of Hypertension Assessing Safety Events with Nitroglycerin as Active Comparator (Eclipse/ NTG)" from The Medicines Company. \$76,000. |
| 2004-2006 | Scios Inc: "Clinical Investigation of Nesiritide Infusion in the Mangement of CABG Patients Requiring Cariopulmonary Bypass." \$55,412. |
| 2005 | USCOM Limited: Research grant for the "Comparison of the USCOM system, Non-Invasive Continuous Wave Doppler vs. Pulmonary Artery Catheter; Cardiowest Total Surgery Patients." \$7,800. |
| 2005-2006 | Proctor and Gamble Pharmaceuticals, Inc and Alexion Pharmaceuticals, Inc: Research support for " A Multicenter, Randomized, Double-blind, Parallel-group, Placebo-Controlled Study of 2mg/kg Bolus Plus 24 hour 0.05 mg/kg/hr Infusion of Pexelizumab in Patients Undergoing Coronary Artery Bypass Grafting with Cardiopulmonary Bypass (PrimoCABG II)." \$91,500. |
| 2013 – 2014 | Covidien Industries: Research support for "INVOS Data Collection Hospital Study": Study Principal Investigator. \$49,393. |
| 2015 | Covidien Industries: Research support for "A Pilot Trial to Quantify the Potential Clinical Utility of Capnography in the PACU" Study Principal Investigator. Sub Investigator: Kelly Arwari. \$170,454.00. |

COLLABORATORS

- Borg U.** Do endotracheal tubes prevent microaspiration? British Journal of Anesthesiology, November 2011.

Peter Randolph Lichtenthal, M.D.
Curriculum Vitae

Endotracheal (ETT) cuff pressure-the role of tracheal size and cuff volume. International Symposium on Intensive Care and Emergency Medicine, March 2011.

Pressure applied to tracheal wall by barrel and taper shaped cuffs. American Society of Anesthesiologist Annual Meeting, October 2011.

- Badal JJ.** Impact of a national tragedy on residency recruitment. American Society of Anesthesiologists Annual Meeting, October 2011.
- Barber B.** Agitated blood is superior to agitated saline in detection of patent foramen ovale. Western Anesthesia Resident Conference Annual Meeting, October 2013.
- Batchelder, P.** Comparison of Endotracheal Tube Intrinsic Suction Rates and Cuff Seal Performance. Crit Care Med Vol. 38. no.12 (suppl.) p. 361 2010.
Butler T. Factor 7 and lung transplantation; it's not what it seems. Western Anesthesia Residents Conference, Anaheim, CA, 2010.
- Castoro C.** Agitated Blood is Superior to Agitated Saline in the Detection of Patent Foramen Ovale. Presented at the Western Anesthesia Residents Conference in Albuquerque, NM, May 2013.

Agitated blood is Superior to Agitated Saline in Detection of Patent Foramen Ovale. Western Anesthesia Resident Conference Annual Meeting, October 2013.
- Deschenes J.** Inaccuracy of a Continuous Arterial Pressure Waveform Monitor When Used for Congenital Cardiac Catheterization. Presented at the Pediatric and Adult Interventional Cardiac Symposium, Las Vegas, NV, 2015.
- Encinas A.** Conflict of Interest: A National Perspective. Prim&R Advancing Ethical Research Conference, November 2015.
- Henderschedt S.** Anesthetic Implications Following Repair of Complex Congenital Heart Disease. Presented at the Western Anesthesia Residents Conference in Albuquerque, NM, May, 2013.
- Howell SG.** Impact of a national tragedy on residency recruitment. American Society of Anesthesiologists Annual Meeting, October 2011.
- Jacobsen WK.** Impact of a national tragedy on residency recruitment. American Society of Anesthesiologists Annual Meeting, October 2011.
- Marsh M.** Conflict of Interest: A National Perspective. Prim&R Advancing Ethical Research Conference, November 2015.
- Maul D.** Do endotracheal tubes prevent microaspiration? British Journal of Anesthesiology, November 2011.
- Peters EC.** Anesthesia Management of Minimally Invasive Stereotactic Temporal Lobe Ablation for Intractable Epilepsy in Multiple Remote Anesthetic Locations. Presented at the American Society of Anesthesiologists, October, 2012.

Cell Saver Inducted Sepsis and Death Following Aortic Valve Replacement. Presented at the American Society of Anesthesiologists, October, 2012.

- Record BC.** Anesthetic Management of a Patient with Leigh's Disease in the Setting of WPW: A Case Report American Society of Anesthesiologists, October, 2015.
- Samson R.** Agitated blood is superior to agitated saline in detection of patent foramen ovale. Western Anesthesia Resident Conference Annual Meeting, October 2013.
- Inaccuracy of a Continuous Arterial Pressure Waveform Monitor When Used for Congenital Cardiac Catheterization. Presented at the Pediatric and Adult Interventional Cardiac Symposium, Las Vegas, NV, 2015.
- Seckeler MD.** Inaccuracy of a Continuous Arterial Pressure Waveform Monitor When Used for Congenital Cardiac Catheterization. Presented at the Pediatric and Adult Interventional Cardiac Symposium, Las Vegas, NV, 2015.
- Typpo K.** Inaccuracy of a Continuous Arterial Pressure Waveform Monitor When Used for Congenital Cardiac Catheterization. Presented at the Pediatric and Adult Interventional Cardiac Symposium, Las Vegas, NV, 2015.
- Wood L.** Pressure applied to tracheal wall by barrel and taper shaped cuffs. American Society of Anesthesiologist Annual Meeting, October 2011.
- Wong A.** Pressure applied to tracheal wall by barrel and taper shaped cuffs. American Society of Anesthesiologist Annual Meeting, October 2011.

PROFESSIONAL DEVELOPMENT

- 10/2015 American Society of Anesthesiologists Annual Meeting
San Diego, CA
- 2/2016 Arizona Society of Anesthesiologists Annual Scientific Meeting
Scottsdale, AZ
- 4/2016 Western Anesthesia Residents Conference
San Francisco, CA
- 9/2016 World Anesthesia Conference
Hong Kong, China

VOLUNTEERISM

- 12/2014-Present St Andrew's Children's Clinic
Nogales, AZ

Signature

Date