

PATRICIA ANN PENKOSKE, M.D.

A. Personal Information:

Home Address: 4944 Lindell Blvd, 4 West
St. Louis, Mo. 63108
Phone: 314-753-5255 Email: patricia.penkoske@gmail.com
Birthdate: October 19, 1947
Social Security No.: will be provided

Citizenship: USA, Landed Immigrant-Canada

Children: Chloe, Elizabeth, Olivia

B. Education:

Undergraduate: Lindenwood College, St. Charles, Mo 1969
B.A. Biology and Chemistry

Graduate: University of Wisconsin, Madison WI 1970
Molecular Biology, no degree

Graduate: Washington University School of Medicine
St. Louis, Mo., M.D. 1974

Postgraduate: Internship-General Surgery, Barnes Hospital,
St. Louis, Mo 1974-1975
Resident-General Surgery, Barnes Hospital,
St. Louis, Mo. 1975-76
Resident-General Surgery, Barnes Hospital
St. Louis, Mo. 1978-1980
Resident-Cardiothoracic Surgery, New England
Deaconess Hospital and Boston Childrens' Hospital,
Boston, MA 1980-1982
Fellowship-Pediatric Cardiac Surgery, Hospital for
Sick Children, Toronto, Canada 1982-1983
Fellowship-Critical Care, Washington University
School of Medicine, St. Louis, Mo. 2/2004-2/2005

Research training:

Washington University School of Medicine,
Department of Radiology Summers of 1968-1970
Washington University School of Medicine,
Division of Cardiology 1976-1978
Washington University School of Medicine,
Department of Surgery 1983-1984

C. Board Certification and Licensure:

- July 1975 Diplomate American Board of Medical Examiners
- July 1976 License State of Missouri
- Sept 1981 Diplomate-American Board of Surgery #27110
- Recertified October 1990, valid until July 1, 2002
- Recertified October 2004, valid thru July 1, 2014
- July 1983 Diplomate-American Board of Thoracic Surgery #4037
- Recertified 1992, Valid through December 31, 2003
- Recertified 2001, Valid through December 31, 2013
- 1984 Fellow of the Royal College of Surgeons
- 1985 LMCC
- 2002 License State of Illinois
- Oct 2007 Certification - Surgical Critical Care Valid until July 1, 2018

D. Current Position and Address:

July 2005 - present
Intensive Care Unit Physician - 8400 Surgical Trauma ICU
Department of Anesthesia
Washington University
660 South Euclid
Campus Box 8109
St. Louis Missouri 63110

E. Previous Professional Experience:

- 1984-1994 Associate Clinical Professor
Departments of Pediatrics and Surgery
University of Alberta
Edmonton, Alberta
- 1986-1988 Director Pediatric Intensive Care Unit
University of Alberta Hospital
- 1987-2000 Director, Residency Training Program
Division of Cardiothoracic Surgery
University of Alberta
- 1993-2000 Staff Physician, Cardiothoracic Surgical ICU
University of Alberta
- 1994-2000 Clinical Professor
University of Alberta
- 1994-2000 Member, Division of Critical Care
University of Alberta
- 2000-12/2002 Clinical Professor
St. Louis University Health Center
Division of Cardiac Surgery
- 12/2002-12/2003 Private Practice-cardiothoracic and vascular surgery
Prairie Cardiovascular Center
Springfield, Illinois
- 6/2005-present Staff Physician, Surgical ICU
Barnes Hospital, St. Louis, MO
- 9/2009-present Locum Tenans Physician
CompHealth
Haved worked in both Great Falls, Montana and Joplin, MO

F. Professional Society Memberships:

American Association of Thoracic Surgeons
Association of Academic Surgeons
American College of Cardiology- Fellow
American College of Surgeons -Fellow
Society of Heart Transplantation
Canadian Cardiovascular Society
Western Thoracic Surgical Association
Society of Pediatric Cardiovascular Surgery
Canadian Society of Cardiovascular and Thoracic Surgery
American Heart Association
Society of Thoracic Surgeons
Society of Critical Care Medician
Lunar Society
Congenital Heart Network
Congenital Heart Surgeons Society

G. Community Involvement:

Board of Directors Alberta Ballet School 1992-1994
Figure Skating Committee - Royal Glenora Club 1994-1999 (President 1998)
Eliot Society Washington University 1990-present (President 2009-2011)
Board of Directors- Lindenwood University (2012-present)
Board of Directors- St. Regis Condo (2011- present) (President 2012-present)

H. Honorary Societies, Honors, and Awards:

- 1970 Woodrow Wilson Fellowship to graduate school
- 1973 AOA- Washington University School of Medicine
- 1973 Samuel Wennerman Prize in Surgery, Washington University

I. Professional Services:**1. Committee Memberships****Local**

- 1989- 1991 Postgraduate Medical Education Committee
Internal Reviews
- 1989- 1991 Heart-Lung/Lung Transplantation Advisory Committee
- 1987- 1990 ICU Advisory Committee
- 1991 - 1999 Infection Control Committee
(Chairman, Sept 92-July 99)
- 1992- 1995 Cardiology Project Team
- 1992- Residency Program Training Committee
- Cardiothoracic Surgery
- 1987 to present (Director)
- 1991- Residency Program Training Committee
(Adult Cardiology)
- 1991 - Residency Program Training Committee
(Pediatric Cardiology)
- 1992- 1995 Strategic Planning in Cardiac Sciences
- Education Committee
- 1992- 1995 Strategic Planning in Cardiac Sciences
- Clinical Cardiac Sciences
Project Team- Children's Health Center
- 1993- 1995 Pediatric Cardiovascular Services Quality Improvement Committee
- 1994-1997 Medical Staff Advisory Board, University of Alberta Hospital
Secretary

- 1998- 1999 Medical Staff Society, University of Alberta Hospital
Vice President
- 2000 Medical Staff Society, University of Alberta Hospital
President
- 1999 Clinical Management Committee, University of Alberta Hospital
- 1999 Capital Region Medical Staff Council

Provincial

- 1990- 1992 Provincial Advisory Committee to Deputy Minister on Cardiac
Services (PACS)
- 1992-1994 Pediatric Subcommittee of
PACS
- 1990- Nominating Committee
Canadian Heart Association
- 1992- Program Committee
Congenital Heart Network
- 1994- Royal College of Physicians and Surgeons of Canada
Member Test Committee in Principles of Surgery

International

- 1992- 1995 Western Thoracic Surgical Association
Membership Committee
- 1993- 1996 Western Thoracic Surgical Association
Council Member
- 1995 – present The Society of Thoracic Surgeons
Education and Resources Committee
- 1997- 1999 SESATS VII Writing Group
- 1998- 1999 Western Thoracic Surgical Association
Local Arrangements Chairman, 1998

2. Editorial and Journal Review Boards

Editorial Board, Cardiology in the Young

Journal Reviewer, Annals of Thoracic Surgery, Circulation

Abstract Reviewer, American Heart Association

J. Research Support:

1968-1970 (summers) Division of Nuclear Medicine
Washington University School of Medicine

1976-1978 Cardiology Division
Washington University School of Medicine

1983-1984 Cardiovascular Surgery Division
Washington University School of Medicine

Research Grants Held

Title	Source	Dates	Amount
Myocardial Protection of the Immature Heart	Central Research Fund	12/85-12/87	\$15,000
Autonomic Neural Influences in Arrhythmogenesis	Alberta Heart and Stroke Foundation	7/86-6/88	\$97,000
Cardiac Mapping of Autonomic Influences and Defibrillation	Alberta Heart and Stroke Foundation	7/88-6/91	\$162,690
Mechanisms of Cardiac Defibrillation	Medical Research Council of Canada	7/91-6/94	\$177,263
Mechanisms of Cardiac Defibrillation	Medical Research Council of Canada	7/94-3/97	
Multicenter Gore-Tex Pericardial Patch Study	Great Ormond Street Hospital	1991-1995	
Multicenter AV Septal Defect Study	Dr. Tjark Ebels Coordinator	1991-1995	
Mechanisms of Cardiac Defibrillation	Medical Research Council of Canada	1/97-3/2000	\$190,641
Multicenter AVERT Study	St. Jude Medical	3/99-	

K. Bibliography:**1. Papers published, in press, or accepted for publication in peer-reviewed journals**

1. Penkoske PA, Potchen EJ, Welch M, Welch T. Clinical chemistry of the tin indium generator. *J Noel Med* 10:646-650, 1969.
2. Potchen EJ, Adatepe M, Studer R, Penkoske M, Penkoske P, Perez C. Radioisotopic assessment of cerebral edema. *Arch Neuro* 24:287-290, 1971
3. Adatepe M, Penkoske PA, Van Amberg A. Red cell and plasma protein labeling with 113 m indium. *International Journal of Applied Radiation Isotopes* 22:498-501, 1971.
4. Corr PB, Penkoske PA, Sobel BE. Adrenergic influences on arrhythmias due to coronary occlusion and reperfusion. *British Heart Journal* 40:62-70, 1978 (Supplement).
5. Penkoske PA, Sobel BE, Corr PB. Disparate electrophysiological alterations accompanying dysrhythmias due to coronary occlusion and reperfusion in the cat. *Circulation* 58:1023-1035, 1978.
6. Sheridan DJ, Penkoske PA, Sobel BE, Corr PB. Alpha adrenergic contributions to dysrhythmia during myocardial ischemia and reperfusion in cats. *J Clin Invest* 65:161-171, 1980.
7. Karlsberg RP, Penkoske PA, Cryer PE, Corr PB, Roberts R. Rapid activation of the sympathetic nervous system following coronary artery occlusion: relationship to infarct size, site and hemodynamic impact. *Cardiovasc Res* 13:523-531, 1980.
8. Penkoske PA, Casteneda AR, Fyler D, Van Praugh R. Origin of a pulmonary artery branch from ascending aorta. *J Thorac Cardiovasc Surg* 85:537-545, 1983.
9. Penkoske PA, Westerman G, Marx J, Rabinovitch M, Norwood W, Casteneda AR. Senning repair in infancy for transposition of the great arteries with VSD. *Ann Thorac Surg* 36:281-288, 1983.
10. Penkoske PA, Freedom RM, Williams WG, Trusler GA, Rowe RD. Surgical palliation of subaortic stenosis in the univentricular heart. *J Thorac Cardiovasc Surg* 87:767-781, 1984.

11. Penkoske PA, LeBlanc J, Judakin R, Olley PM, Moes CA, Williams WG, Trusler GA, Rowe RD. Repair of coarctation of the aorta with subclavian flap arterioplasty in the first year of life. *J Thorac Cardiovasc Surg* 87:894-900, 1984.
12. Penkoske PA, Trusler GA, Freedom PM, Rowe RD. Cardiac transplantation in children. Editorial, *J Transplant* 3:233-238, 1984.
13. Penkoske PA, Nagger C, Neptune W, Ellis FH. Mitral valve reconstruction vs. replacement for myxomatous degeneration of the mitral valve. *Am J Cardiol* 5:735-738, 1985.
14. Anderson RH, Zuberbuhler JR, Penkoske PA, Neches WH. Of clefts, commissures and things. *J Thorac Cardiovasc Surg* 90:605-610, 1985.
15. Penkoske PA, Neches WH, Anderson RH, Zuberbuhler JR. Further observations on the morphology of atrioventricular septal defects. *Journal of Thoracic and Cardiovasc Surg* 90:611-622, 1985.
16. Anderson RH, Penkoske PA, Zuberbuhler JR. Variable morphology of ventricular septal defect in double inlet left ventricle. *Am J Cardiol* 55:1560-1565, 1985.
17. Penkoske PA, Duncan NF, Collins-Nakai PL. Surgical repair of double chamber right ventricle with or without ventriculotomy. *J Thorac Cardiovasc Surg* 3(3):385-93, 1987.
18. Pierse PM, Byrne PJ, Coe JY, Penkoske PA. Isolated chylopericardium after repair of coarctation of the aorta. *J Thorac Cardiovasc Surg* 94(2):307-310, 1987.
19. Hamilton RM, Penkoske PA, Byrne P and Duncan NF. Spontaneous aortic thrombosis in a neonate presenting as coarctation. *Ann Thorac Surg* 45:564-565, 1988.
20. Witkowski FX, Penkoske PA. A completely automated activation-repolarization interval algorithm for directly coupled unipolar electrograms and its three dimensional correlation with refractory periods. *J Electrocardiol* 21(3): 273-282, 1988.
21. Witkowski FX, Penkoske PA. A new fabrication technique for directly coupled (DC) transmural cardiac electrodes. *Am J Physiol* 254:H804-H810, 1988.
22. Witkowski FX, Penkoske PA. A new system design for transmural directly coupled (DC) cardiac mapping in vivo. Proceedings of the 10th IEEE/EMBS Conference, pp. 99-101, 1988.
23. Witkowski FX, Penkoske PA. Relation of defibrillatory potential minima to post-defibrillatory activation. Proceedings of the 10th IEEE/EMBS Conference, pp. 212-214, 1988.
24. Witkowski FX and Penkoske PA. A new technique for three-dimensional localization

- of transmural electrodes. *Biomed Instrumentation and Technology* 23:396-402, 1989.
25. Robertson MA, Byrne P, Penkoske PA and Jenuis J. The perinatal management of critical aortic stenosis diagnosed by fetal echocardiography. *British Heart Journal* 61:365-367, 1989.
 26. Penkoske PA, Collins-Nakai PL, Duncan NFD. Subaortic stenosis in childhood. *J Thorac Cardiovasc Surg* 98:852-860, 1989.
 27. Witkowski FX and Penkoske PA. Beat-to-beat measurement of epicardial conduction and repolarization anisotropy in vivo in the dog. *Proceedings of the 11th IEEE/EMBS Conference*, pp. 199-201, 1989.
 28. Ebels T, Anderson PH, Devine WA, Debich DE, Penkoske PA, Zuberbuhler JR. Left atrioventricular valve anomalies and ventricular septal morphology in atrioventricular septal defects. *J Thorac Cardiovasc Surg* 99:299-307, 1990.
 29. Witkowski FX, Penkoske PA and Plonsey R. Mechanism of cardiac defibrillation in open chest dogs using unipolar DC coupled simultaneous activation and shock potential recordings. *Circulation* 82:244-260, 1990.
 30. Miedzinski LJ, Callaghan JC, Fanning EA, Self ET, Goldsand G, Modry D, Penkoske P, Preiksaitis J, Sheehan G, Stems L, Taylor GO and Tyrrell DLJ. Antimicrobial prophylaxis for open heart surgery. *Annals of Thoracic Surgery* 50:800-807, 1990.
 31. Witkowski FX and Penkoske PA. Refractoriness prolongation by defibrillation shocks. *Circulation* 82(3):1064-1066, 1990.
 32. Witkowski FX and Penkoske PA. A cardiac monophasic action potential recording array. *Proceedings of the 12th IEEE/EMBS Conference*, pp. 595-596, 1990.
 33. Witkowski FX and Penkoske PA. Epicardial activation times post defibrillation in open chest dogs using unipolar DC coupled activation records. *T Electrocardiography* 23:39-45, 1990.
 34. Witkowski FX, Penkoske PA. An improved technique for HIS bundle recording and ablation in dogs. *J Surg Res* 49:337-340, 1990.
 35. Robertson MA, Penkoske PA and Bunacan NF. Right pulmonary artery obstruction following pulmonary artery banding. *J Thorac Cardiovasc Surg* 51:73-75, 1991.
 36. Robertson MA, Penkoske PA, Duncan NF. Doppler detection of branch pulmonary artery obstruction following pulmonary artery banding in infants. *Ann Thorac*

Surg 51:73-75, 1991.

37. Gayle MO, Ryan CA, Pauw K and Penkoske PA. The asymptomatic subclavian steal syndrome in children following cardiac surgery: a potential hazard with reoperation? *Ped Cardiol* 13:100-103, 1992.
38. Witkowski FX, Penkoske PA, Kavanagh KM. Estimate of electromotive surface dimension during ventricular fibrillation. *Proc 14th IEEE/EMBS Conference*, pp. 631-632, 1992.
39. Witkowski FX, Penkoske PA, Kavanagh KM. A new cardiac button electrode design for intraoperative mapping. *Proceedings of the 14th IEEE/EMBS Conference* pp.2704-2705, 1992.
40. Witkowski FX, Kavanagh KA, Penkoske PA and Plonsey R. In vivo estimation of cardiac transmembrane current. *Circulation Research* 72:424-439, 1993.
41. Witkowski FX, Penkoske PA and Kavanagh KM. Combined optically coupled transmembrane potential and transmembrane current recording arrays. *Proceedings of the 15th IEEE/EMBS Conference*, pp. 863-864, 1993.
42. Witkowski, FX, Penkoske PA and Kavanagh KM. The unique signature of cardiac electronic deflections demonstrated by transmembrane current recordings. *Proceedings of the 15th IEEE/EMBS Conference*, pp. 859-860, 1993.
43. Ignaszewski AP, Collins-Nakai PL, Kasza LA, Gulamhusein, Penkoske PA, Taylor DA. Aneurysm of the membranous ventricular septum producing subpulmonic outflow tract obstruction in a patient with congenitally corrected transposition of the great vessels: diagnosis by transesophageal echocardiography- case report and review of the literature. *Can J Cardiol* 10(1):67-70, 1994.
44. Amitay M, Welch R, Byrne P, Robertson M, Penkoske PA. Neonatal spinal cord syndrome associated with hypoplastic aortic arch and anemia. *Ann Thorac Surg* 56:568-570, 1993.
45. Witkowski FX, Kavanagh KM, Penkoske PA and Plonsey R. Significance of inward transmembrane current in determining local myocardial electrical activation during ventricular fibrillation in dogs. *Circulation Research* 74:507-524, 1994.
46. Lopaschuk GD, Collins-Nakai RL, Olley PM, Montague TJ, McNeil G, Gayle M, Ryan CA, Penkoske PA, Yeung L, Kinegan BA. Plasma fatty acid levels in infants and adults after myocardial ischemia. *Am Heart J* 128:61-7, 1994.
47. Dorian P, Witkowski FX, Penkoske PA, and Feder-Elitu RS. Barium decreases defibrillation energy requirements. *J Cardiovasc Pharmacol* 23:107-112, 1994.
48. Witkowski FX, Kavanagh KM, Penkoske PA and Plonsey R. Epicardial cardiac source-field behavior. *IEEE Trans Biomed Engr* 42:552-558, 1995.

49. Witkowski FX, Kavanagh KM, Penkoske PA, Plonsey R, Spano ML, Ditto WL, Kaplan DT. Evidence for determinism in ventricular fibrillation. *Phys. Rev. Lett.* 75(6):1230-1233, 1995.
50. Witkowski FX, Penkoske PA, Plonsey R, Kaplan DT, Spano ML, Ditto WL, Kavanagh KM. Development of a nonlinearly deterministic signal generator for real time chaos control testing. *Proc. 17th IEEE/EMBS Conference*, pp. 287-288, 1995.
51. Penkoske PA, Entwistle LM, Marchak BE, Seal RF, Gibb W. Aprotinin in children undergoing repair of congenital heart defects. *The Annals of Thoracic Surgery* 60:5529-532, 1995.
52. Dorian, P, Penkoske PA, Witkowski, FX. Order in disorder: effect of barium on ventricular fibrillation. *Can. J. Cardiol* 12(4):399-406, 1996.
53. Witkowski FX, Penkoske PA, PlonseyR, Kavanagh KM, Giles WP, Spano ML, Ditto WL. A novel mapping storage architecture enabling tens of thousands of channels on a personal computer platform. *Proc. 8th IEEE/EMBS Conference Paper number 88*, 2 pages, 1996.
54. Penkoske PA. Hypoplastic Left Heart Syndrome: Key References. *Ann Thorac Surg* 63(1):385, 1997.
55. Witkowski FX, Leon LJ, Penkoske PA, Clark RB, Spano ML, Ditto WL, Giles WP. A method for visualization of ventricular fibrillation: design of a cooled fiberoptically coupled image intensified CCD data acquisition system incorporating wavelet shrinkage based adaptive filtering. *CHAOS* 8(1):94-102, 1998.
56. Witkowski FX, Leon LJ, Penkoske PA, Giles WP, Spano ML, Ditto WL, Winfree AT. Spatiotemporal evolution of ventricular fibrillation. *Nature* 392:78-82, 1998.
57. Mullen JC, Bentley MJ, Mong K, Karmy-Jones R, Lemermeyer G, Gelfand ET, Koshal A, Modry DL and Penkoske PA. Reduction of leg wound infections following coronary artery bypass surgery. *Can J Cardiol* 15(1):65-68, January, 1999.
58. Witkowski FX, Leon LJ, Penkoske PA, Giles WR, Spano ML, Ditto WL, Winfree AT. Spatiotemporal evaluation of ventricular fibrillation. *Nature* 392:78-82 1998.
59. Mullen JC, Bentley MJ, Gelfand ET, Koshal A, Modry DL, and Penkoske PA. Single aortic cross-clamp technique does not reduce the incidence of stroke following isolated coronary artery bypass grafting. *J Thorac Surg*, submitted August 1999.

Patents

1. Francis X. Witkowski, Patricia A. Penkoske. Method of manufacturing transmural cardiac electrodes. United States Patent Number 4,847,980: Date of patent: July 18, 1989.

2. Book chapters, monographs, review articles, case reports

1. Pediatric Open Heart Surgery, Chapter 5 in Open Heart Surgery Theory and Practice. Ed. JC Callaghan, J. Wartak, Praeger Scientific, New York, 1986.
2. Review of "Perioperative Cardiac Dysrhythmias" by John Allee, for Int J Cardiol 1985.
3. Review of "Pediatric Cardiac Surgery" by Eduardo Arciniegas, for Int J Cardiol.
4. Review of "Myocardial Protection and Cardioplegia" by Akio Suzuko and Tei Haka, Int J Cardiol 1985.
5. Review of "Surgical Treatment of Aortic Aneurysms" for Medical Post, September 12, 1986.
6. Becker AE, Anderson PH, Penkoske PA and Zuberbuhler JR. Morphology of double inlet right ventricle. In: Double Inlet Ventricle. Edited by Anderson PH, Crupi G, and Parenzan L. Elsevier, pp. 36-71, 1986.
7. Penkoske PA. Subaortic stenosis. In: The Aortic Valve. Edited by Emery RW, Arom Hanley and Belfus, Inc., Philadelphia, 1990.
8. Witkowski FX and Penkoske PA. Activation patterns during ventricular fibrillation. In: Workshop on Mathematical Approaches to Cardiac Arrhythmias. J. Jalife (ed) New York Academic of Sciences, New York, pp. 219-231, 1990.
9. Witkowski FX, Penkoske PA, Kavanagh KM. Mapping of Ventricular Fibrillation: Technical Considerations. In: Cardiac Mapping. M. Shensa, M. Borggreffe, G. Breithardt (eds). Futura Publishing Company Inc., Mount Kisco, pp 79-84, 1993.
10. Witkowski FX, Penkoske PA, and Kavanagh KM. Critical mass hypothesis in the initiation and sustenance of ventricular fibrillation. In: Sudden Cardiac Death: prevalence, mechanisms, and approaches to diagnosis and management. M. Akhtar, R.J. Myerburg, J.N. Ruskin (eds.). Williams and Wilkins, Penn., pp. 124-127, 1994.
11. Witkowski FX, Penkoske PA and Kavanagh KM. Activation patterns during ventricular fibrillation. In: Cardiac Electrophysiology.- From Cell to Bedside, 2nd Edition. D Zipes and J Jalife (eds). W.B. Saunders Company, Cambridge, Mass., pp. 539-543, 1995.

12. Penkoske PA and Anderson RAH. Coronary artery anatomy in the Ross procedure. In: Cardiac Reconstruction with Allograft Valves. RA Hopkins (ed). Springer Verlag (in press).
13. Witkowski FX, Kavanagh KM, Penkoske PA, Plonsey R. Measurement of ionic currents and local extracellular fields. In: Concepts and techniques in bioelectric measurements, is the medium carrying the message.2 J Billette, AR LeBlanc (eds). Editions de L'Ecole Polytechnique de Montreal, pp. 29-33, 1997.
14. Witkowski FX, Penkoske PA, Spano ML, Ditto WL, Giles WP, Leon LJ. An improved technique for visualization of the spatiotemporal complexity of ventricular fibrillation. Proc. 4th Experimental Chaos Conference, in press.

3. Abstracts

1. Penkoske PA, Karlsberg RP, Roberts R. Salutary effects of anesthesia on myocardial infarction. Presented at AFCR, Southern Section, January 1978.
2. Penkoske PA, Sobel BE, Corr PB. Diverse electrophysiological mechanisms underlying malignant ventricular dysrhythmia. Presented at the American College of Cardiology, March 1978.
3. Penkoske PA, Sobel BE, Corr PB. Inhibition by alpha adrenergic blockade of the ventricular dysrhythmias induced by reperfusion. Presented at the AFCR National Meeting, May 1978.
4. Penkoske PA, Esterman GR, Marx J, Rabinovitch M, Norwood WI, Castenada, AR. Senning repair in infancy for transposition of the great arteries with V50. Presented at the Society of Thoracic Surgery, January 1983.
5. Penkoske PA, Freedom RM, Williams WG, Trusler GA, Rowe RD. Surgical palliation of subaortic stenosis in the univentricular heart. Presented at the ARA, November 1983.
6. Penkoske PA, LeBlanc J, Judakin R, Olley PM, Moes CA, Williams WG, Trusler GA, Rowe RD: Repair of coarctation of the aorta in the first year of life. Presented at the AHA, November 1983.
7. Penkoske PA, Ellis FH, Naggar C, Neptune W. Results of mitral valve reconstruction in patients with mitral regurgitation secondary to myxomatous valve degeneration. Presented at the American College of Chest Physicians, October 1983.
8. Penkoske PA, Duncan NF, Collins-Nakai PL. Surgical repair of double chamber right ventricle with or without ventriculotomy. Presented at the Western Thoracic Surgical Society, June 1986.
9. Witkowski FX and Penkoske PA. Correlation between transmural and ventricular refractory periods and activation-recovery intervals in dogs. Clinical Investigative Medicine, 10:C53, 1987.

10. Witkowski FX and Penkoske PA. Simultaneous cardiac potential field and direct cardiac recordings during ventricular defibrillation. *Circulation* 76(Supp IV) 109, 1987.
11. Witkowski FX and Penkoske PA. Cardiac defibrillation: why it works and sometimes doesn't. Seventh Annual Heritage Days, 1987.
12. Penkoske P, Robertson M, and Duncan N. Management of critical pulmonary stenosis in the neonate- consideration of the "disadvantageous" ductus and the use of a two-stage approach for the hypoplastic right ventricle. *Clinical Investigative Medicine* 10(5):C40, 1987.
13. Penkoske P. New frontiers in cardiac pediatric cardiac surgery. Presented at the Canadian Council of Cardiovascular Nurses Annual Meeting, October 1987.
14. Yeske H, Sheikh A, Yanofsky R, Penkoske P and Biggs D. Pharmacokinetics of morphine in children after open heart surgery. Western Society for Pediatric Research, 1987.
15. Witkowski FX and Penkoske PA. Simultaneous potential field and cardiac recordings from the heart during ventricular defibrillation. *Physics in Medicine and Biology*, 33(Suppl):165, 1988.
16. Witkowski FX and Penkoske PA. The design of multiple electrode mapping instrumentation. *Physics in Medicine and Biology* 33(Supp 1), 167, 1988.
17. Penkoske PA, Collins-Nakai RL, Duncan, NF. Subaortic stenosis in childhood. Lillehei Symposium. Presented October 1988.
18. Witkowski FX and Penkoske PA. Modulation of cardiac homogenous anisotropy by stimulus strength in vivo. *Circulation* 78 (Supp II), 414, 1988.
19. Samman A, Robertson MA, Penkoske PA and Duncan NF. Pulmonary atresia intact ventricular septum: a 20-year experience. Canadian Cardiovascular Society Meeting, 1990.
20. Lopaschuk GD, Penkoske PA. Plasma fatty acid levels in infants and children undergoing congenital heart surgery. Canadian Cardiovascular Society Meeting, Calgary, 1991.
21. Lopaschuk GD, Davies NJ, Olley PM, Collins-Nakai PL, Montague TJ, Gayle M, Ryan T, Penkoske P, Yeung Land Finegan BA. Plasma fatty acid levels in infants and children undergoing congenital heart surgery. *Can J Cardiol* 7 (Suppl A): 77A, August 1991.
22. Dorian P, Witkowski F, Penkoske P and Feder-Elituv R. Order in disorder: mechanisms of barium induced lowering of defibrillation energy requirements. *Can J Cardiol* 7(Suppl A):130A, August 1991.
23. Robertson MA, Patrick JK, Olley PM, Penkoske PA and Duncan NF. Bi-directional ductal flow: a specific indicator of neonatal coarctation. *Can J Cardiol* 7(Suppl A): 117A, August 1991.

24. Kavanagh KM, Yunus A, Penkoske PA, Witkowski FX, Phase transition induced impedance changes with biphasic defibrillation shocks. *Circulation* 84(4): 11498, 1991.
25. Dorian P, Witkowski FX, Penkoske P. Order in disorder: mechanisms of barium induced lowering of-- defibrillation energy requirements. *Circulation* 84(4): 11498, 1991.
26. Witkowski FX, Kavanagh KM, Penkoske PA, Plonsey R. Measurement of cardiac transmembrane current in vivo, a novel marker of local activation. Accepted for presentation, *Journal of the American College of Cardiology* 21(2):220A, 1993.
27. Kavanagh KM, Plonsey R, Penkoske PA and Witkowski FX. Cardiac transmembrane current can differentiate propagating electrical activity from electrotonic activity during ventricular fibrillation. *Can J Cardiol* 9:68E, 1993.
28. Kavanagh KM, Plonsey R, Penkoske PA, Witkowski FX. Cardiac transmembrane current can differentiate propagating electrical activity from electrotonic activity during ventricular fibrillation. *Circulation* 88(4):1-626, 1993.
29. Witkowski FX, Kavanagh KR, Penkoske PA, Plonsey R, Kaplan D, Spano M, Ditto W. In vivo transmembrane cardiac current determination provides evidence for unstable fixed points during ventricular fibrillation. *Can J Cardiol* 10:94 C, 1994.
30. Swan PK, Mullen JC, Penkoske PA. Continuous peritoneal drainage in the neonate and child after cardiopulmonary bypass. *Can J Cardiol* 10:119C, 1994.
31. Mullen JC, Bentley MJ, Mong K, Karmy-Jones R, Lemermeyer G, Allegretto M, Gelfand ET, Koshal A, Modry DL, Penkoske PA. Reduction of leg wound infection following coronary artery bypass surgery. VIIIth Annual Cardiac and General Surgery Update, December 4-7, 1996.
32. Mullen JC, Bentley MJ, Mong K, Karmey-Jones R, Allegretto M, Koshal A, Gelfand ET, Penkoske PA. Reduction of Leg Wound Infections Post-Coronary Artery Bypass Surgery. *Chest*, VIIIth Annual Cardiac and General Surgery Update Course, Puerto Rico, 1997.
33. Peachell JL, Teo K, Gelfand ET, Modry DL, Mullen JC, Penkoske PA, Koshal A. Outcome of Coronary Artery Bypass Graft Surgery in Octogenarians. Canadian Cardiovascular Society Meeting, Winnipeg, 1997.
34. Witkowski FX, Penkoske PA. Novel approaches to mapping cardiac rhythm disturbances. *Proc Microsc Soc Canada*, 24:42, 1997.
35. Mullen JC, Bentley MJ, Mong K, Karmy-Jones R, Lemermeyer G, Gelfand ET, Koshal A, Modry DL and Penkoske PA. Reduction of leg wound infections following coronary artery bypass surgery. *Can J Cardiol*, in press.
36. Witkowski FX, Leon LJ, Penkoske PA, Clark RB, Spano ML, Ditto WL, Giles WR. A method for visualization of ventricular fibrillation: design of a cooled fiberoptically coupled image intensified CCD data acquisition system

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