

CURRICULUM VITAE

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Education:

1970 B.S.M.E. Washington University, St. Louis, MO
(Mechanical and Aerospace Engineering)

1975 Ph.D. Pennsylvania State University, State College, PA
(Engineering Science and Mechanics)

1980 M.D. University of Miami, Miami, FL

Postdoctoral Training:

Internship and Residencies:

1980 -1981 Internal Medicine, University of Pittsburgh, Presbyterian University
Hospital, Pittsburgh, PA

1981-1983 Resident in Radiology, Harvard Medical School, Brigham and Women's
Hospital, Boston, MA

1983-1984 Chief Resident in Radiology, Brigham and Women's Hospital, Boston, MA

Fellowships:

1984-1986 Cardiovascular & Interventional Radiology, Brigham and Women's
Hospital, Harvard Medical School, Boston, MA

Licensure and Certification:

1981- National Board of Medical Examiners
1984- American Board of Radiology (ABR)
1985- Massachusetts Medical Registration # 54900
1985- California Medical License # G56211 (inactive)
1985- New York Medical License # 164715-1 (inactive)
1996- ABR / Certificate of Added Qualification: CVIR

1998 Physician Leader Training (NYU Stern School of Business)
2003 Academic Executive Leadership Program – Chief of Clinical Services (Harvard University: School of Public Health, Medical School, & Business School)
2008-2018 ABR / Maintenance of Certification: CVIR

Academic Appointments:

1970-1971 Graduate Assistant, Washington University
1971-1975 Research Assistant, Pennsylvania State University (NIH Grant No. IR-01-HL-11289-05)
1981-1984 Clinical Fellow in Radiology, Harvard Medical School, Boston, MA
1984-1985 Instructor in Radiology, Harvard Medical School
1986-1993 Assistant Professor of Radiology, Harvard Medical School
1987-1998 Faculty Member, Harvard-Massachusetts Institute of Technology, Division of Health Sciences and Technology
1993-1998 Associate Professor of Radiology, Harvard Medical School
1998-2002 Professor of Radiology, Cornell Medical School, New York, NY
1999-2002 Professor of Radiology (Adjunct), College of Physicians and Surgeons, Columbia University, New York, NY
2002-2007 Chairman, Department of Radiology, University of Massachusetts Medical School, Worcester, MA
2002-2009 Professor of Radiology (Tenured), University of Massachusetts Medical School, Worcester, MA
2002-2009 Professor (Adjunct), Worcester Polytechnic Institute, Worcester, MA

Hospital Appointments:

1986-1998 Staff Radiologist, Brigham and Women's Hospital
1986-1998 Staff Radiologist, Dana-Farber Cancer Institute
1991-1998 Co-Director, CVIR, BWH, Boston, MA
1995-1998 Co-Director, Vascular Center, BWH, Boston, MA
1986-1998 Consultant (IR), Newton-Wellesley Hospital, Newton, MA
1998 Consultant Radiologist, Quincy Hospital, Quincy, MA
1998-2002 Director, CVIR, The New York Presbyterian Hospital, Weill Cornell Medical Center, New York, NY
1999-2002 Consultant, The New York Presbyterian Hospital, Columbia Campus
2002-2007 Chair & Radiologist-in-Chief, UMass Memorial Health Care, Worcester
2008-2009 Academic Sabbatical from UMass

Medical Technology Industry Appointments:

2009-2012 Chief Medical Officer & EVP, Medical & Engineering R&D, Delcath Systems, Inc., 810 Seventh Avenue, Suite 3505, New York, NY 10019
2013-2014 Chief Scientific Officer & EVP, R&D (Devices & Pharmaceuticals) Delcath Systems, Inc.

Other Professional Positions and Visiting Appointments:

1975-1978 Research and Development Engineer, Duracell International (P.R. Mallory & Co., Inc.) Laboratory for Physical Science, Burlington, MA
1986 Visiting Cardiovascular Radiologist, Green Lane Hospital, Auckland, New Zealand (Sept.)
1986 Consultant, Bio-fluid mechanics, CREARE Inc., Hanover, NH (NIH Grant No.2R44-HL34884-02A2)
1990-1998 Consultant, NIH (informal, non-paid) on Cardiovascular and Interventional Radiology.
1991-1998 External Reviewer; The Sterling-Winthrop Imaging Research Institute, Ontario, Canada.
1991-1995 Consultant, Bio-Fluid Mechanics, DAAT Research, Hanover, NH
1993-2009 Scientific Consultant, Angiodynamics, Inc., Queensbury, NY
1995-1998 Scientific Consultant, Abbot Labs, Chicago, IL
1996-1998 Scientific Consultant, Boston Scientific Corporation, Natick, MA
1996-1998 Scientific Consultant, Cordis Corp., Miami Lakes, FL
1998-2000 Scientific Consultant, Searle, Chicago, IL
1998-2000 Scientific Consultant, EKOS Corp., Bothell, WA (NIH SBIR Grant No. 2R44HL57739-02)
1998-2000 Scientific Consultant, AMGEN, Thousand Oaks, CA, NAT Project
1999-2002 Scientific Consultant, COR Therapeutics, Inc. S. San Francisco, CA, ULTIMATE Trial
2003-2009 Medical Advisory Board, Angiodynamics Inc., Queensbury, NY
2003-2004 DSMB Member, CAMPER Study (Sanofi-Syntholab)
2003-2004 PAD Working Group, BMS/Sanofi-Syntholab Partnership
2004-2009 Medical Safety Monitor, Boston Biomedical Assoc., Northborough, MA
2008-2009 Scientific Consultant, Arsenal Medical, Inc., Watertown, MA
2008-2011 Industry & Professional Advisory Council, College of Engineering, The Pennsylvania State University, State College, PA
2008-External Reviewer, Natural Sciences and Engineering Research Council of Canada
2009- Reviewer, NCI/NIH Cancer Imaging Program (Special Reviews)
2009 External Consultant, University of Arizona, College of Medicine
2014-2015 Senior Medical/Engineering Consultant, Delcath Systems, Inc. NY, NY.
2014-2015 Medical Consultant, Covidien Respiratory (Medtronic), Denver, CO.
2014-2015 CEC/DSMB Chair, NEAT Study, TVA Medical, Austin, TX

Awards and Honors:

1969 Pi Tau Sigma, Mechanical Engineering Honorary Fraternity
1989 Cum Laude, RSNA Scientific Exhibit Award
1995 Distinguished Reviewer, Journal of Vascular & Interventional Radiology
1995 The Roentgen Centenary Oration at The Fifth Annual Meeting of The All India Congress of Radiology & Indian Imaging and Radiologic Association, Roentgen Centennial Celebration, November 11, 1995, Bangalore, India
1996-present The Best Doctors in America

1996- Distinguished Scientific Advisor, RSNA Research & Education Fund
1998-2002 Examiner, American Board of Radiology (CVIR – CAQ)
2000 The Chandravathi Ramanathan Oration in Radiology, The Nizam’s Institute of Medical Sciences (Hyderabad, India). Selection criteria: Integrity and Expertise of the speaker. Title: The Evolution of Interventional Radiology.
2001-present America’s Top Doctors
2001 Keynote Speaker, Brazilian Academy of Military Medicine, Rio de Janeiro, Brazil
2003 Special Recognition Award, Indian Society for Vascular & IR
2005 Opening Session Speaker, International Society of Interventional Radiology (ISIR)/Japanese SAIR 2005, Awaji, Japan
2006 Opening Session Speaker, Founding Meeting of the Pan-Arab Interventional Radiology Society (PAIRS), Dubai, UAE
2006 Centennial Fellow, Department of Engineering Science & Mechanics, The Pennsylvania State University – “Honored for being an outstanding representative of a century-long tradition of excellence & providing a remarkable role model for future generations of ESM students”
2006 Opening Session Speaker, APCCVIR 2006 (Asian Pacific), Pattaya, Thailand
2007 Outstanding Engineering Alumnus Award, Engineering Science & Mechanics, College of Engineering, The Pennsylvania State University, State College, PA. (Awarded to only 250 of the 75,000 graduates to date, since the inception of The College of Engineering.)
2007-present The Global Directory of ‘Who’s Who’
2009-present America’s Top Radiologists
2018- NIH Director’s Award. Interagency Working Group in Medical Imaging 2017 Report to the White House Office of Science & Technology Policy.
2022- NIH Director’s Award. Medical Imaging & Data Resource Center.

Major Committee Assignments:

Brigham and Women’s Hospital

1987-1990 Computerized Patient Database System for Cardiovascular & Interventional Radiology: organization and implementation.
1987-1989 Radiology-Pathology Quality Assurance Committee
1987-1998 CVIR Fellowship Director: Organized application process, internal review, and site inspection for ACGME accreditation.
1988-1994 Physician Resource Management: annual, monthly & daily coverage responsibilities for CVIR division.
1991-1998 Practice Management Group, Angiography & Cardiac Cath. Laboratories
1992-1998 Chairman, Practice Management Group, Angiography & Cardiac Catheterization Laboratories
1994-1998 BWH-Radiology Finance Advisory Committee
1995-1996 BWH Cost Reduction Challenge Goal Team
1995-1996 Chairman Subcommittee on Medical Devices, Partner’s Cost Reduction Team (Radiology)

New York Presbyterian Hospital

1998-2002 CVIR Fellowship Director
2000-2002 Member, Significant Adverse Events Committee, NYPH
2000-2002 Member, Cardiovascular Executive Council, NYPH

UMass Memorial Medical Center

2002-2007 Senior Leadership Council (CEO, Dean/Chancellor, Chairs)
2002-2007 Breast Center Executive Committee
2002-2007 UMMS Executive Council
2003-2007 Capital Equipment Procurement Committee
2005-2007 Clinical Practice Committee
2005-2007 Heart & Vascular Center Executive Committee

National Institutes of Health

2015- Chair, Trans NIH-FDA Medical Device Interest Group (MDRIG)
2015- NIH Representative, Medical Device Innovation Consortium (MDIC)
2015-2017 Intra-Agency Working Group on Medical Imaging (Established by The Office of Science & Technology Policy, President Obama White House)
2016- Design & Engineering by Undergraduate Trainees (DEBUT), NIBIB Selection Panel
2017-2018 Good Health Steering Committee, Center for the Advancement of Science in Space (CASIS)
2017-2018 4-D Nucleome, Executive Committee
2017-2018 NIH Point-of-Contact, NIH-NASA Collaboration in Human Health
2018- Special Advisor to NIH-NASA Collaboration (transferred to NCATS)
2020- Chair, NIH Internal Advisory Board on MIDRC

Professional Societies:

2011-2014 Member, European Society of Medical Oncology (ESMO)
2009-2014 Member, American Society of Clinical Oncology (ASCO)
2009- Editorial Committee, Society for Gastrointestinal Interventions (SGI)
2008- Honorary Member, Asian-Pacific Society of Interventional Radiology
2005-2009 Member, American College of Radiology (ACR)
2005-2012 Member, American Medical Association (AMA)
2002- Member (Corresponding), Cardiovascular & Interventional Radiology Society of Europe (CIRSE)
2002-2006 Member, Biomedical Engineering Research Opportunities Workshop (BIROW) Program Committee (SIR/ARR)
2002-2007 Member, Society of Chairs of Academic Radiology Departments (SCARD)
2007- Emeritus Member, SCARD
2001-2007 Board of Directors, Academy of Radiology Research (ARR)
2001- Honorary Member, Indian Society of Vascular & Interventional Radiology

2001-2002 Chairman, Cardiovascular & Interventional Radiology Research and Education Foundation (CIRREF/SIR)
1997-2002 Member, Committee on Interventional Radiology, ACRIN
1997-2002 Member, CIRREF Board
1997-2002 Member, Executive Council, Society of Interventional Radiology
1997-2001 President, CIRREF (Presently, SIR Foundation)
1996-1997 Vice President, CIRREF
1996-1997 Chairman, Research Committee, SIR
1995-1997 Member, Council Advisory Committee, SIR
1995-2002 Member, Research Committee, SIR
1995-1997 Member, AHA Trans-catheter Therapy Committee
1994-1996 Member, Executive Committee, AHA Cardiovascular Radiology Council
1992-1996 Council Representative, AHA Inter-Council Vascular Biology Working Group
1992-2002 Member & Fellow (1998), American Heart Association (AHA)
1991-1992 President, New England Society for CVIR
1987-1998 Member, American Roentgen Ray Society
1987- Fellow, Society of Interventional Radiology
1984-2009 Member, New England Society for CVIR
1982-2014 Member, Radiological Society of North America (RSNA)
1981-1998 Member, New England Roentgen Ray Society
1969-1970 Vice President, Pi Tau Sigma, Mechanical Engineering Honorary Fraternity, Washington University, St. Louis. MO

Editorial Boards:

Associate Editor:

1995-2003 Journal of Vascular & Interventional Radiology
1997-2002 Intervention (Europe)
1998-2009 Newsletter, The Indian Society for Vascular & Interventional Radiology
2006-2007 Editor, Update on Interventional Radiology, (Quarterly Newsletter, WPI Publications)

Journal Reviewer:

1984- Cardiovascular and Interventional Radiology
1986- American Journal of Roentgenology
1987- Academic Radiology (Investigative Radiology)
1988- Radiology
1991- Journal of Vascular & Interventional Radiology
1995- New England Journal of Medicine
1996- Journal of Vascular Surgery

Major Research Interests:

Basic and Applied Sciences:

1. Fluid and solid mechanics of the cardiovascular (CV) system in health and disease
2. Computer modeling with specific applications to above
3. Minimally invasive technologies for cardiovascular & oncological interventions
4. Extracorporeal Blood Flow Circuits & Filtration

Clinical Sciences:

1. Clinical cardiovascular and interventional radiology
2. Non-invasive CV imaging and quantification – e.g., DSA, US, MRA, CTA
3. Interventional Oncology: Imaging and Therapy

Grants:

1971-1975 NIH Grant No. IR-01-HL-11289-05, Hemodynamic Factors in Atherogenesis, Research Assistant and Co-investigator. PI: Prof. Norman Davids, Penn State University

1986-1989 NIH SBIR Grant No.2R44-HL34884-02A2, Consultant, Creare Inc.,

1987 BRSG 798090 (BWH/HMS): Improved delivery system for intra-arterial thrombolytic therapy

1987 W.F. Milton Fund 60-223-2360-2: Improved thrombolysis by pulsatile infusion of enzymes

1988 BRSG 798260 (BWH/HMS): Three-dimensional image reconstruction and perspective display of MR images of abdominal aortic aneurysms

1989 BRSG 792120 (BWH/HMS): Non-laser thermal angioplasty: in-vivo evaluation of the electromagnetic field focusing probe

1990-92 E-Z-EM, Inc. (Westbury, NY): Prospective Randomized Controlled Comparison of Conventional vs. Forced periodic (pulsatile) infusion of thrombolytic agents in peripheral arterial occlusions

1991 BRSG 794110 (BWH/HMS): Experimental validation of intravascular-contrast-motion-detection algorithm for studying arterial hemodynamics

1993-95 Abbot Labs. (Chicago, IL): TOPAS Trial, (Thrombolysis or Peripheral Arterial Surgery). Study utilizing recombinant-urokinase

1994 Cook, Inc. (Bloomington, IN): Evaluation of MR compatible catheters

1995-96 Boston Scientific Inc. (Natick, MA): Antiproliferative agents (Iloprost) delivered via porous angioplasty balloons

1997-98 Boston Scientific / Cordis / Lynx Pharm. / Tanabe Pharm. (Japan): Local delivery of c-myc oligonucleotide to prevent intimal hyperplasia following arterial stenting in a porcine model

1997-98 CIRREF Grant: Local Delivery of c-myc oligonucleotide for the prevention of intimal hyperplasia following arterial stenting in pigs (with Terimitsu Hasebe)

1997-98 Cordis Endovascular: Core Lab, Dialysis Access Recanalization with the Hydrolyser

1997-99 Abbot Labs: PURPOSE (Pro-UK dose-ranging trial), National co-PI.

1997-98 Boston Scientific /Meadox: Vanguard Aortic Stent-graft Trial, Co-Investigator.
1998 Amgen (Thousand Oaks, CA): NAT Trial. First in human multicenter safety and dose-ranging trial of a novel acting thrombolytic agent. National Co-PI.
1998- 2000 NIH SBIR Grant No.2R44HL57739-02, Consultant, EKOS Corp.
1999- 2001 Cor Therapeutics: ULTIMATE Trial: Combination Therapy with rt-PA Plus Eptifibatide for Arterial Occlusions. National PI.
2004-2005 Joseph P. Healy Grant, Patient and Clinician Guidelines for 3D Imaging. Co-PI with Young Kim, MD, PhD
2005-2007 MeviSys (Korea). Evaluation of 3D Software. (Co-PI with Y. Kim)

Principle Clinical and Hospital Service Responsibilities:

1986-1998 Attending, Division of Cardiovascular and Interventional Radiology, Brigham & Women's Hospital, Harvard Medical School
1989-1998 Attending, Noninvasive Vascular Laboratory, BWH
1989-1998 Attending, Cardiovascular Magnetic Resonance Imaging, BWH
1998-2002 Attending, CVIR, The New York Presbyterian Hospital (Cornell)
1999-2000 Attending, CVIR, The New York Presbyterian Hospital (Columbia)
2002-2007 Chairman, Department of Radiology, University of Massachusetts
2008-2009 Academic Sabbatical (UMMS)

Major Administrative Responsibilities:

1991-1998 Co-Director, Division of Cardiovascular & Interventional Radiology
1992-1998 Co-Director, BWH Vascular Center
1991-1998 Fellowship Director, CVIR, BWH
1998-2002 Chief of Service and Director, Division of CVIR, The New York Presbyterian Hospital, NY (Cornell Campus)
2002-2007 Radiologist-in-Chief, UMass Memorial Health Care, Worcester, MA
2008-2009 None during sabbatical
2009-2012 Chief Medical Officer & EVP R&D, Delcath Systems, Inc., NY, NY.
2013 Chief Scientific Officer & EVP R&D, Delcath Systems, Inc., NY, NY.
2015- Director, Research Sciences & Strategic Directions, NINIB/NIH
2017- Acting Director, Division of Applied Sciences and Technologies.
2020 – NIBIB Lead, Medical Imaging & Data Resource Center (MIDRC)

Teaching Experience:

Lectures & Symposia (Didactic):

1970-1971 Lecturer: Engineering Measurements, Washington U., St. Louis, MO
1975 Lecturer: Engineering Mechanics, Pennsylvania State U., State College, PA
1984-98 Department of Radiology, Brigham and Women's Hospital: (1) Clinical training of Radiology residents and fellows; (2) Organized core curriculum in Cardiovascular and Interventional Radiology for resident teaching conferences.

1984-98 Harvard Medical School: Teaching medical students (Cardiovascular and Interventional Radiology)

1984-98 Lectures & Workshops, Harvard Medical School CME Courses: CVIR and Cardiovascular MRI.

1987-92 Tutorial on Medical Imaging and Interventional Radiology, Harvard/M.I.T. Division of Health Sciences and Technology

1987-98 Preceptor, Undergraduate Research Opportunities Program, M.I.T

1992-98 Program Director, International Symposia on Cardiovascular & Interventional Radiology Brigham & Women's Hospital, Harvard Medical School. Developed curriculum, invited nationally & internationally renowned faculty to participate. Raised funds for this top-rated Harvard Radiology CME course.

1993 Refresher Course Director: Regional Thrombolytic Therapy. SCVIR 18th Annual Meeting, New Orleans, LA. March 3, 1993

1996 Co-Organizer, Symposium of Vascular Wall Biology and Imaging, SCVIR 20th Annual Meeting, Seattle, WA, March 2, 1996

1996 Scientific Advisor/Moderator, Practical Endovascular Techniques, Leicester Royal Infirmary NHS Trust, Leicester, UK

1996 Refresher Course Director: Arterial & Venous Thrombolytic Therapy. RSNA 82nd Annual Meeting, December 5, Chicago, IL

1997 Director/Organizer: Primary Care Physicians Symposium on Referring your Patient with DVT / PE, Brigham & Women's Hospital, February 19, Boston, MA

1997 Co-Director, Symposium on Peripheral Vascular Recanalization, August 1-2, Rockport, ME

1997 Symposium on Carotid Artery Imaging: Moderator/Coordinator. 70th Scientific Sessions of the AHA, November 8, Orlando, FL

1998 Refresher Course Director: Arterial & Venous Thrombolytic Therapy. RSNA 83rd Annual Meeting, November 30, Chicago, IL

1999 Co-chairman. Research Initiatives Conference: "Mover and Shakers in the Vascular Tree – Hemodynamic and Biomechanical Factors in Blood Vessel Pathology." Lifeline/CIRREF/NHLBI Conference, March 11-12, Bethesda, MD

2000 Co-chairman. Research Initiatives Conference: "The Biology of Vascular Interventions – Minimally Invasive Approaches to Vascular Disease." February 17-18, Bethesda, MD

2000 International Director, The Millennium Congress on Interventional Radiology, The Indian Society for Vascular & Interventional Radiology, December 9-12, New Delhi, India

2001 Co-Director, "Current Perspectives in Thrombolysis" Co-sponsored by Yale Medical School and Cornell Medical School, June 9, 2001, Chatham, MA.

2002 Co-Director, Adventures in Interventional Radiology 2002, sponsored by SoBrice, Brazilian College of Radiology, and SIR, August 18-22, Arianau, Amazon Region, Brazil.

2011 Chemosaturation-PHP: A New Evidence-based Technology for the Treatment of Liver Tumors, 14th Annual Meeting of SoBRICE; August 10-13, 2011, Buzios, RJ, Brazil.

2017 SIR meets NIH. SIR CME - Self-Assessment Module, SIR Annual Meeting, March 7, 2017, Washington, DC (with Brad Wood, NIH Clinical Center)

2018 Co-Organizer: NIH Conference on Gadolinium Deposition - What we know and don't know: Toward a Research Roadmap, Feb 15-18, 2018, NIH Campus, Bethesda, MD.

2018 Organizer, NIH Conference on Artificial Intelligence Applications in Medical Imaging, August 23-24, 2018, NIH Campus, Bethesda, MD.

2019 Organizer, Accelerating Clinical Adoption of Machine Intelligence Applications in Medical Imaging. NIBIB Trans-NIH Workshop, November 5, 2019, Bethesda, MD.

Advisor for CVIR Research Fellows/Assistants:

1987-1988 Diane Caramore (UROP Student, MIT, Cambridge, MA)

1989-1990 Paramjit Singh Chopra, M.D. (Bombay, India)

1991-1992 Jay Chakrabarty, M.D. (Calcutta, India)

1991-1992 Roshann Hoshmand, M.D. (Boston, MA)

1991-1992 Paul Foster, BS, (Applied Medical Physics, U Mass., Boston, MA)

1992-1993 Rosaire Mongrain, Ph.D., (Montreal Heart Institute, Quebec, Canada)

1992-1993 Elaine Iaunow, M.D. (Boston, MA)

1993-1994 Yeon Hyeon Choe, M.D., (Samsung International Fellow, Seoul National U., Seoul, Korea)

1994 Jane Philips-Hughes, M.D. (Cardiff, Wales, UK)

1994-1995 Seishi Nakatsuka, M.D. (Keio University, Tokyo, Japan)

1996-1998 Jose Eduardo Morales, M.D. (Mato Grosso do Sul, Brazil)

1995-1996 Takashi Yamane, M.D., (Keio University, Tokyo, Japan)

1997-1998 Meena Narayanaswamy, M.D., (Bangalore, India)

1996-1998 Terry Hasebe, M.D., (Keio University, Tokyo, Japan)

1999-2000 Mehmet Ali Gurses, M.D., (Ankara, Turkey)

2006 Sylvia Trisolli (University of Milan, Milan, Italy)

2007 Caterina Misrolli (University of Milan, Milan, Italy)

Procedure Proctor with participation:

1990 IVC Filter Placement, Newton-Wellesley H., Newton, MA

1993 Intra-arterial Stent Placement, Newton-Wellesley H., Newton, MA

1996 Intra-arterial Stent Placement, Hillcrest Heart Center, Waco, TX

2012-2015 Chemosaturation with Percutaneous Hepatic Perfusion. PHP v2 Device, Delcath Systems, Inc. (at 14 European Medical Centers: Ireland 1 (Galway), UK 1 (Southampton), France 2 (Paris, Bordeaux), Italy 2 (Milan, Varesse), Spain 2 (Madrid, Majorca), Germany 6 (Frankfurt, Berlin, Hanover, Heidelberg, Gottingen, Leipzig)

Live Case Demonstrations: Primary or Assisting Operator

1996 Live Case Transmissions via Satellite from Canary Islands (Spain) to Boston (BWH), February 26-March 1

1997 Bilateral Aorto-iliac Stenting: from BWH to Boston Scientific Corp./ Medi-Tech "WIN" Corporate Symposium for Scientists & Engineers, March 3, Burlington, MA.

1997 Dialysis Access Graft Recanalization: from The Royal Melbourne Hospital to the Third Scientific Meeting of The Asian-Pacific Congress on CVIR, April 10, Melbourne, Australia.

1997 Peripheral Arterial Thrombolysis: (closed circuit TV Transmission), Ain Shams University Hospital, September 7, Cairo, Egypt (Host: Dr. Emad Hussein (Director) and Dr. El-Mehairy, Chief of Surgery)

1997 1) TIPSS & Coronary Vein Embolization (Variceal Bleeder); 2) Branch Vessel Renal Artery Angioplasty; 3) Esophageal Stenting of malignant esophageo-bronchial fistula; 4) Hepatic Vein Stenting - Budd Chiari. Symposium on Interventional Radiology, 301 Military Hospital, November 13, Beijing, China (PRC).

1997 1) Stenting of Unilateral Ostial Renal Artery Stenosis; 2) Stenting of Ostial Renal Artery Stenosis in a patient with a solitary kidney; 3) Suprarenal IVC Filter Placement; 4) SFA Angioplasty. International Symposium and Workshop in Interventional Radiology, Center for Cardio-Thoracic Sciences, All India Institute of Medical Sciences, November 21-22, New Delhi, India

1998 1) Renal Artery Stenting, 2) Iliac Artery stent via left brachial a., 3) SVC / innominate v. stents. The Fourth International Symposium on CVIR, Harvard Medical School, October 5-9, Boston, MA

1999 1) Aortoiliac stenting, 2) Iliac angioplasty, 3) SFA/SVG Angioplasty/thrombolysis, 4) TIPS, 5) Renal (FMD) Angioplasty, 6) Carotid and brachiocephalic stenting. Joint Meeting of the Neuroradiology Society and Indian Society for Vascular and Interventional Radiology, October 21-24, Bangalore, India

2000 Stent-graft closure of SFA-to-SFV traumatic fistula. Millennium Congress of Cardiovascular and Interventional Radiology, All India Institute of Medical Sciences, December 9-12, New Delhi, India

2000 Ostial Renal Artery Stenting. International Workshop on Interventional Radiology, Nizam's Institute of Medical Sciences, December 18-19, Hyderabad, India.

Invited Lectures:

1. Blood Flow Measurements using Nuclear Magnetic Resonance. The New England Society for Cardiovascular and Interventional Radiology, May 1984, Boston, MA
2. Blood Flow Measurements using Nuclear Magnetic Resonance. The Indian Institute for Nuclear Medicine and Allied Sciences, December 1984, New Delhi, India
3. Quantitative Coronary Arteriography. Green Lane Hospital, September 1986, Auckland, New Zealand
4. Quantitative Angiography: Radiology Grand Rounds, Harvard Medical School, January 1988, Boston, MA
5. New Developments in Cardiovascular & Interventional Radiology. Attleboro Doctors Club (Sturdy Memorial Hospital), (Spring) 1988, Attleboro, MA
6. Vascular MRI: An Overview. Radiology Grand Rounds, University of Massachusetts, September 29, 1989, Worcester, MA
7. Medications in the Interventional Procedure Suite: Society for Cardiovascular & Interventional Radiology, March 26, 1990, Miami Beach, FL
8. Accelerated Thrombolysis: New Developments. New England Society for Cardiovascular and Interventional Radiology, May 8, 1990, Boston, MA

9. Interventional Radiology: a Fertile Ground for R&D in Industry: Kendal Co., Research & Development Laboratory, December 10,1990, Mansfield, MA
10. Intraarterial Thrombolysis: Rationale & Technical Developments. Angiodynamics, R&D Lab., February 5, 1991, Glens Falls, NY
11. Newer Methods in Accelerated Intraarterial Thrombolysis: Radiology Grand Rounds, Thomas Jefferson University, February 12, 1991, Philadelphia, PA
12. Hemodynamic Evaluation of Coronary Artery Stenoses. Cardiology Seminar, Goddard Memorial Hospital, June 25, 1991, Stoughton, MA
13. Magnetic Resonance Imaging vs. Conventional Angiography New England Society of Vascular and Interventional Radiology (Technologists), September 16, 1991, Boston, MA
14. Magnetic Resonance Imaging of the Cardiovascular System New England Conference of Radiologic Technologists, September 20, 1991, Sturbridge, MA
15. Practical Peripheral Arterial Thrombolysis: Newton-Wellesley Hospital, Surgery-Radiology Rounds, September 23, 1991, Newton, MA
16. Newer Methods in PAO Thrombolysis: West Roxbury VA Hospital, Surgical Rounds, September 27, 1991, Boston, MA
17. Newer Methods in PAO Thrombolysis: Kent County Hospital, Radiology Grand Rounds, January 24, 1992, Warwick, RI
18. Newer Methods in PAO Thrombolysis: Burbank Hospital, Radiology Grand Rounds, February 13, 1992, Fitchburg, MA
19. Future Directions in PAO Thrombolysis: Medical Advisory Panel, Genentech, Inc., March 27, 1992, San Francisco, CA
20. Pulsatile Infusion of Thrombolytic Agents: Special Session, Controversies & Consensus in Vascular & Interventional Radiology. Society for Cardiovascular & Interventional Radiology, April 8, 1992, Washington, DC
21. Pulsed-spray Techniques in Thrombolysis: NE Conference of Radiologic Technologists, September 26, 1992, Manchester, NH
22. What's Old and New (and What Works) in Thrombolytic Therapy: Symposium on "Percutaneous and Operative Interventions in the Treatment of Peripheral Vascular Disease". New York Hospital, Cornell Medical School, October 2, 1992, New York, NY
23. Newer Methods in PAO Thrombolysis: Radiology Grand Rounds, Massachusetts General Hospital, December 9, 1992, Boston, MA
24. Getting Started with Intra-arterial Thrombolytic Therapy, Practical Aspects: Combined Surgery and Radiology Grand Rounds. The Norwood Hospital, February 1, 1993, Norwood, MA
25. Vascular Biology - Basic Science: SCVIR 18th Annual Meeting, Chairperson of Scientific Session and presenter, February 4, 1993, New Orleans, LA
26. Intra-arterial Thrombolysis Overview: Massachusetts Society of Radiologic Technologists, 1993 Conference, March 27, 1992, Boston, MA
27. Peripheral Thrombolysis: When and when not: Practical Interventional Radiology, Massachusetts General Hospital / Harvard Medical School CME Course, May 2-3, 1993, Boston, MA
28. Peripheral Thrombolysis: When and when not: Department of Radiology, Interventional Radiology Rounds, Keio University Hospital, Keio University, May 20,

1993, Tokyo, Japan

29. Current Status of Vascular Interventions: First Asian-Pacific Congress of Cardiovascular & Interventional Radiology, Chairperson of Scientific Session. May 27,1993, Seoul, South Korea
30. Practical Peripheral Arterial Thrombolysis. SERONO Symposium on Intraarterial Thrombolysis, Cardiovascular and Interventional Radiology Society of Europe, 1993 Annual Meeting, June 23,1993, Budapest, Hungary
31. Newer Infusion Methods for Accelerating Intraarterial Thrombolysis: Fourth International Symposium on Anticoagulant, Antithrombotic and Thrombolytic Drugs, September 29, 1993, Boston, MA
32. Peripheral Arterial Thrombolysis: Concepts, Concerns, and Caveats. Workshop on Fibrinolysis, Western Angiographic and Interventional Society, September 30, 1993, Portland, OR
33. Intraarterial Thrombolysis of Lower Extremity Occlusions: A Prospective, Randomized Comparison of Periodic Forced Infusion to Conventional Slow Continuous Infusion. Symposium on Fibrinolysis, Western Angiographic & Interventional Society, October 3, 1993, Portland, OR
34. Practical Regional Intrarterial Thrombolysis: Turkish National Radiology Congress, RAD-93, October 12, 1993, Antalya, Turkey
35. Catheter-Directed Endovascular Procedures and Thrombolysis: Symposium on Current Status of Peripheral Arterial Disease. Greater Boston Interventional Cardiology Forum. (Moderators: Arthur Sassahara, M.D.and Joseph Loscalzo. M.D., Ph.D.; Discussants: John Mannick, M.D., and Eugene Braunwald, M.D.), October 20, 1993, Boston, MA
36. Critical Analysis of Thrombolytic Therapy. The 1993 Symposium on Current Issues and New Techniques in Interventional Radiology, Co-sponsored by The New York Hospital, Cornell Medical School, and The Montefiore Hospital, Albert Einstein Medical School, November 18, 1993, New York, NY
37. Intraarterial Thrombolysis: Practical Course in Cardiovascular & Interventional Radiology, February 1994, Las Palmas, Canary Islands, Spain
38. Pathology of Restenosis: Plenary Session of The 19th Annual Scientific Meeting of SCVIR, March 22, 1994, San Diego, CA
39. Complications of Thrombolysis: Advances in the Treatment of Lower Extremity Disease. University of Rochester, School of Medicine and Dentistry, April 17, 1994. New York, NY
40. Intraarterial Thrombolytic Therapy - Adjunct to Surgery: Surgery Rounds. The Norwood Hospital, May 18, 1994, Norwood, MA
41. Peripheral Intraarterial Thrombolytic Therapy - Implications for the Surgeon: Surgical Grand Rounds, The First City Hospital of Moscow, State Medical University of Russia, May 30, 1994. Moscow, Russia (Host: Prof.Victor S. Saveljev, M.D., D.Sc., Surgeon-in-Chief of Russia)
42. Peripheral Intraarterial Thrombolytic Therapy - Implications for the Surgeon: Special Conference of Athens Vascular Surgeons, Sotiria Hospital, Athens University School of Medicine, June 6, 1994. Athens, Greece (Host: Michael N. Sehas, MD, FACS, Prof. & Chairman, Dept. of Surgery)
43. Advances in Peripheral Arterial Thrombolysis: Symposium on Recent Advances

in the Use of Intraarterial Thrombolysis, Strazhesko Research Institute of Cardiology, June 11, 1994. Kiev, Ukraine (Host: Prof. Vladimir A. Bobrov, Ukraine Academy of Sciences, Director, SRIC)

44. Advances in Peripheral Arterial Thrombolysis: Cardiovascular Medicine Conference, Institute of Cardiovascular Diseases, June 15, 1994. Bratislava, Slovakia (Host: Prof. Juraj Fabian, MD, Director, ICD)

45. Intraarterial Thrombolysis: Angiology Conference, Allgemeines Krankenhaus Wien, University of Vienna, and Austrian Society for Angiology, June 16, 1994. Vienna, Austria (Host: Dr. Herbert Ehringer, University Professor & Director of Angiology, Department of Medicine, School of Medicine, University of Vienna)

46. Peripheral Intraarterial Thrombolytic Therapy - Implications for the Surgeon: Special Lecture, Polish Society of Vascular Surgery, June 17, 1994, Warsaw, Poland (Host: Prof. Maciej Borkowski, Chairman, Polish Society of Vascular Surgery)

47. A Critical Analysis of Thrombolysis in Peripheral Arteries: Symposium on Advances in Revascularization, September 22, 1994, Hollingbourne, Kent, England. (and Chairperson of Session on Thrombolytic Therapy)

48. Thrombolytic Therapy for Occluded Dialysis Access Grafts: Symposium on Advances in Revascularization, September 22, 1994, Hollingbourne, Kent, England

49. Pathology of Restenosis: Symposium on Advances in Revascularization. September 22, 1994, Hollingbourne, Kent, England

50. IVC Filters - The American Experience: Symposium on Advances in Revascularization. September 23, 1994, Hollingbourne, Kent, England

51. Plasminogen Activators in Clinical Practice: Interventional Radiology International Workshop. Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), Sept.30, 1994. Prague, Czech Republic. (Chairperson of Session on Thrombolytic Therapy)

52. Pulse-Spray Thrombolysis: Interventional Radiology International Workshop. Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), Sept.30, 1994. Prague, Czech Republic

53. Endovascular MR Imaging and Intervention: Interventional MRI workshop, Sponsored by The Society for Magnetic Resonance, October 9, 1994. Boston, MA

54. Update on Methods for Accelerating Thrombolytic Therapy: Fifth International Symposium on Anticoagulant, Antithrombotic and Thrombolytic Drugs, October 26, 1994, Boston, MA

55. Transjugular Intrahepatic Portosystemic Shunts - Current Indications, Techniques, and Outcomes: Fourth Annual Meeting of The All India Congress of Radiology and Indian Imaging and Radiologic Association, Roentgen Centennial Celebration, January 6, 1995, Bombay, India

56. Peripheral Arterial Thrombolysis : A Practical Approach: Fourth Annual Meeting of The All India Congress of Radiology and Indian Imaging and Radiologic Association, Roentgen Centennial Celebration, January 7, 1995, Bombay, India

57. Magnetic Resonance Image Guided Interventions - Current Concepts: Fourth Annual Meeting of The All India Congress of Radiology and Indian Imaging and Radiologic Association, Roentgen Centennial Celebration, Jan. 7, 1995, Bombay, India

58. Human Research: AHA / SCVIR Research Symposium at The 20th Annual Scientific Meeting of the Society of Cardiovascular and Interventional Radiology. March 25, 1995, Ft. Lauderdale, FL
59. Peripheral Arterial Thrombolysis: State of the Art. Plenary Session of The 20th Annual Scientific Meeting of the Society of Cardiovascular and Interventional Radiology. March 28, 1995, Ft. Lauderdale, FL
60. Technique Variables in Peripheral Arterial Thrombolysis: Summit Meeting on Thrombolytic Therapy in Peripheral Vascular Disease. April 8, 1995, Snowbird, Utah
61. Peripheral Arterial Thrombolysis: Interventional Radiology in the 90's. Miami Vascular Institute/Baptist Hosp., University of Miami. April 27, 1995, Key West, FL
62. Restenosis: What is it? Can it be prevented?: Interventional Radiology in the 90's. Miami Vascular Institute/Baptist Hosp., U. Miami. April 27, 1995, Key West, FL
63. Overview of Inferior Vena Cava Filters: Interventional Radiology in the 90's. Miami Vascular Institute / Baptist Hosp., U. Miami. April 28, 1995, Key West, FL
64. Peripheral Arterial Angioplasty: Division of Cardiovascular Medicine, Department of Medicine, Brigham and Women's Hospital/Harvard Medical School, May 23, 1995, Boston, MA
65. Pulse - Spray Thrombolysis, An update: Second International Workshop on Interventional Radiology. Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 15, 1995. Prague, Czech Republic
66. Regional Thrombolysis for Acute Lower Limb Ischemia: Second International Workshop on Interventional Radiology, Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 15, 1995. Prague, Czech Republic
67. Inferior Vena Cava Filters - An Overview: Symposium on Pulmonary Embolism. The Second Asian - Pacific Congress of Cardiovascular & Interventional Radiology. August 31, 1995, Tokyo, Japan
68. Peripheral Arterial Thrombolysis: Symposium on Thrombolysis. The Second Asian - Pacific Congress of Cardiovascular & Interventional Radiology. September 1, 1995, Tokyo, Japan
69. Comparison of Infusion Techniques in Peripheral Intraarterial Thrombolysis: Advances In Peripheral Vascular Interventions. Department of Surgery, Washington University, September 16, 1995, St. Louis, MO
70. Technical Determinants of Success in Catheter-directed Thrombolysis for Peripheral Arterial Occlusions: Seventh Annual Conference on Advanced Interventional Techniques for Peripheral Vascular Disease, Midwest Vascular Institute of Illinois, October 20, 1995, Downers Grove, IL
71. Overview of Vascular MRI: Maharashtra Radiological Society, November 4, 1995, Bombay, India
72. Update on MRI - guided Interventions: Maharashtra Radiological Society, November 4, 1995, Bombay, India
73. Vascular Stenting: Sree Chitra Tirunal Institute for Medical Sciences and Technology, November 6, 1995, Trivandrum, India (A National Center of Excellence)
74. Restenosis - Definition and Prevention: Sree Chitra Tirunal Institute for Medical Sciences and Technology, November 6, 1995, Trivandrum, India

75. Human Research - Do's and Don'ts: Sree Chitra Tirunal Institute for Medical Sciences and Technology, November 6, 1995, Trivandrum, India
76. Peripheral Vascular Interventions: *The Roentgen Centenary Oration* at The Fifth Annual Meeting of The All India Congress of Radiology and Indian Imaging and Radiologic Association, Roentgen Centennial Celebration, November 11, 1995, Bangalore, India
77. Vascular Stenting: The Fifth Annual Meeting of The All India Congress of Radiology and Indian Imaging and Radiologic Association, Roentgen Centennial Celebration, November 12, 1995, Bangalore, India
78. Interventional MRI - an update: The Fifth Annual Meeting of The All India Congress of Radiology and Indian Imaging and Radiologic Association, Roentgen Centennial Celebration, November 12, 1995, Bangalore, India
79. New Thrombolytic Agents: Fifth International Course on Vascular and Interventional Radiology as a Therapeutic Alternative. Co-Sponsors: University of Las Palmas (Spain), University of Louisiana (USA), and Università degli Studi di Roma "La Sapienza" (Italy), February 27, 1996, Las Palmas, Gran Canaria, Spain. (Moderator, Session on Vascular Recanalization Techniques and Live Case Demonstrations)
80. Endoluminal MR Imaging of the Arterial Wall: SCVIR/AHA Symposium on Atherosclerosis & Restenosis, SCVIR 21st Scientific Meeting, March 1, 1996, Seattle, WA, (Organizer of Symposium, Moderator of Session on Restenosis)
81. MR Image-guided Interventions - An Overview: Plenary Session on Vascular Diagnosis, SCVIR 21st Scientific Meeting, March 2, 1996, Seattle, WA
82. Restenosis - A primer for Radiology Residents: Resident Conference, The New York Hospital, Cornell Medical Center, March 28, 1996, New York NY
83. Advances in Peripheral Arterial Thrombolytic Therapy: Grand Rounds (Visiting Professor), The New York Hospital, Cornell Medical Center, March 28, 1996, New York, NY
84. Peripheral Arterial Angioplasty & Stenting: Vascular Center Conference, Brigham & Women's Hospital, Harvard Medical School, April 3, 1996, Boston, MA
85. Endoluminal MR Imaging: Sixth International Symposium on Interventional Radiology and New Vascular Imaging. Japanese Society for Angiography and Interventional Radiology, April 24, 1996, Aomori, Japan
86. Thrombolytic Therapy for Peripheral Arterial Occlusions: Sixth International Symposium on Interventional Radiology and New Vascular Imaging, JSAIR, April 26, 1996, Aomori, Japan
87. Local Catheter-directed Drug Delivery: Practical Endovascular Techniques. Leicester Royal Infirmary NHS Trust. April 30, 1996, Leicester, UK
88. Prospective Trials in Peripheral Arterial Thrombolysis: The British Thrombolysis Study Group, May 1, 1996, Leicester, UK
89. Peripheral Arterial Thrombolysis - Practical Aspects: Second Annual New York Symposium on Vascular and Endovascular Techniques (SUNY-Brooklyn and University of Rochester), May 17, 1996, New York, NY
90. Catheter-directed Thrombolysis: pulsed-spray versus continuous infusion: Symposium on Thrombolysis in Peripheral Arterial Diseases, Congress of The International Union of Angiology, May 20, 1996, Budapest, Hungary

91. Current Status of MRI-guided Interventions: Meeting of the International Pediatric Radiology Society, May 26, 1996, Boston, MA
92. Peripheral Arterial Thrombolysis - An Overview: Brooke Army Medical Center, Fort Sam Houston, May 29, 1996, San Antonio, TX
93. A Practical Approach to Peripheral Arterial Thrombolysis: Wilford Hall Medical Center, Lackland Air Force Base, May 29, 1996, San Antonio, TX
94. Outcomes Analysis of Peripheral Arterial Thrombolysis: University of Texas at San Antonio - Health Science Center, May 29, 1996, San Antonio, TX
95. Overview of Practical Thrombolytic Therapy: Symposium on Interventional Radiology or Nurses and Technologists, Third International Workshop on Interventional Radiology. Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 14, 1996. Prague, Czech Republic
96. Thrombolytic Therapy - Technical Determinants of Success: Third International Workshop on Interventional Radiology. Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 14, 1996. Prague, Czech Republic
97. MR-guided Interventions - The Boston experience: Third International Workshop on Interventional Radiology. Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 15, 1996. Prague, Czech Republic.
98. Current Status of Intraarterial Stents: Grand Rounds (Visiting Prof.), Henry Ford Hospital, Case Western University, August 5, 1996. Detroit, MI
99. Controversies in Peripheral Arterial Thrombolysis: Henry Ford Hospital, Case Western University, August 5, 1996. Detroit, MI
100. Acute Lower Extremity Ischemia: results of randomized trials: Sixth New England Symposium on Peripheral Vascular Disease. Rhode Island Hospital, Brown University, August 16, 1996, Newport, RI
101. MR-guided Interventions - The Boston experience: Annual Meeting of The Cardiovascular and Interventional Radiological Society of Europe (CIRSE), September 9, 1996. Funchal, Madeira, Portugal (also, Moderator of Symposium on Arterial Recanalization)
102. Acute Lower Extremity Ischemia: results of recent randomized trials: Eighth Annual Conference on Advanced Interventional Techniques for Peripheral Vascular Disease, Midwest Vascular Institute of Illinois, Sept. 20, 1996, Downers Grove, IL
103. Thrombolysis of Arterial Grafts and Occlusions: Symposium on Infrainguinal Disease, Sponsored by The Long Island Angio Club and The Long Island Vascular Surgery Society, October 28, 1996, Woodbury, NY
104. New Approaches in the Treatment and Prevention of Restenosis: Symposium on Infrainguinal Disease, Sponsored by The Long Island Angio Club and The Long Island Vascular Surgery Society, October 28, 1996, Woodbury, NY
105. Endoluminal MR Imaging of Atherosclerosis: Session on How to Image Atherosclerosis with MRI, The 69th Scientific Sessions of the American Heart Association, November 13, 1996, New Orleans, LA
106. Thrombolysis for Arterial Occlusions: Refresher Course on Thrombolytic Therapy. 82nd Scientific Assembly & Annual Meeting of the RSNA, December 5, 1996, Chicago, IL

107. Peripheral Thrombolysis in North America: Congress of Thrombolysis, British Thrombolysis Study Group and Gloucestershire Royal Hospital, January 16, 1997, London, UK
108. Thrombolytic Therapy for Lower Extremity Occlusive Disease: Lessons from recent prospective randomized trials: Ninth Annual International Symposium on Vascular Diagnosis and Intervention, Miami Vascular Institute, Baptist Hospital, January 27, 1997, Miami Beach, FL
109. Percutaneous IVC Filter Placement: Update: Referring your patient with DVT/PE, Symposium for Primary Care Physicians, Brigham and Women's Hospital, February 12, 1997, Boston, MA
110. Treatment of Acute Lower Limb Ischemia: Roles of Thrombolysis and Surgery: 22nd Annual Scientific Meeting, SVCIR (Plenary), Mar. 9, 1997, Washington, DC
111. Treatment of Acute Lower Limb Ischemia: Roles of Thrombolysis and Surgery: American Radiological Nurses Association, Spring Meeting, Mar. 9, 1997, Washington, DC.
112. MRI Guided Interventions: The Association of Vascular and Interventional Radiographers, Mar. 10, 1997, Washington, D.C.
113. Pathophysiology of Restenosis: Asian-Pacific Congress on Cardiovascular and Interventional Radiology, April 8, 1997, Melbourne, Australia
114. Thrombolysis Hypothetical: Expert Panel Discussion on Thrombolytic Therapy. Asian- Pacific Congress on Cardiovascular and Interventional Radiology, April 10, 1997, Melbourne, Australia
115. Current uses of IVC Filters: Asian-Pacific Congress on Cardiovascular and Interventional Radiology, April 10, 1997, Melbourne, Australia
116. Technical Aspects of Thrombolysis for PAO: Radiology Grand Rounds (Visiting Prof.), Hartford Hospital, U. of Connecticut, May 7, 1997, Hartford, CT
117. Results of Recent Randomized Trials in Thrombolytic Therapy for PAO: Jefferson Radiology Group, Hartford Hospital, May 7, 1997, Hartford, CT
118. Technical Determinants of Success in Lytic Therapy for PAO: Symposium on Managing the Patient with Thromboembolic Disease, Henry Ford Health System, May 10, 1997, Detroit, MI
119. Thrombolytic Therapy for PAO: Results of Recent Randomized Trials: Symposium on Managing the Patient with Thromboembolic Disease, Henry Ford Health System, May 10, 1997, Detroit, MI.
120. Techniques in Peripheral Arterial Thrombolysis: Fourth International Workshop on Interventional Radiology, Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 12, 1997. Prague, Czech Republic.
121. Treatment of Lower-limb Ischemia: Roles of Thrombolysis and Surgery: Fourth International Workshop on Interventional Radiology, Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 14, 1997. Prague, Czech Republic
122. Arterial Interventions: Fourth International Workshop on Interventional Radiology, Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 14, 1997. Prague, Czech Republic

123. Remotely Heatable Stents and Endovascular MR Imaging Catheters: Sixth International and Interdisciplinary Symposium on Endoluminal Stents & Grafts. Sponsored by CIRSE, JSAIR, The German Radiological Society, Ruhr University (Bochum), and Johann Wolfgang Goethe University (Frankfurt), June 21, 1997. Frankfurt, Germany
124. Thrombolysis Techniques: Symposium on Arterial Recanalization, August 1, 1997, Rockport, ME
125. Surgery and Thrombolysis for Peripheral Arterial Occlusions: Symposium on Arterial Recanalization, August 1, 1997, Rockport, ME
126. Biology of Restenosis: Symposium on Arterial Recanalization, August 2, 1997, Rockport, ME
127. Thrombolysis for PAO-Practical Aspects: Surgery & Radiology Grand Rounds, Ain Shams University Hospital, Sept. 7, 1997, Cairo, Egypt
128. The Roles of Lytic Therapy and Surgery in Acute Lower Limb Ischemia: Surgery & Radiology Grand Rounds, Ain Shams University Hospital, Sept. 7, 1997, Cairo, Egypt
129. Thrombolysis for PAO-Practical Aspects: Vascular Radiology and Surgery Meeting (Hacettepe University), Sept. 9, 1997, Ankara, Turkey
130. The Roles of Lytic Therapy and Surgery In Acute Lower Limb Ischemia: Vascular Radiology and Surgery Meeting (Hacettepe University), Sept. 9, 1997, Ankara, Turkey
131. The Roles of Lytic Therapy and Surgery in Acute Lower Limb Ischemia: Annual Meeting of the Dutch Society of Angiology (NVA), Sept. 12, 1997, Den Hague, The Netherlands
132. A Report on The International Consensus Document on Thrombolytic Therapy in the Management of Lower Limb Ischemia: Ninth Annual Conference on Interventional Techniques for Peripheral Vascular Disease, Sept. 19, 1997, Oak Brook, IL
133. Peripheral Artery Interventions: Thrombosis & Thromboembolism: New Strategies for Improved Patient Care. Cardiovascular Division, Department of Medicine, Brigham & Women's Hospital, Harvard Medical School, October 24, 1997, Boston, MA
134. Intraarterial Thrombolysis for Acute Lower Extremity Ischemia: Symposium on Interventional Radiology, Chinese Academy of Medical Sciences & Peking Union Medical College (Prof. Liu Yu-Qing), 301 Military Hospital, November 12, 1997, Beijing, China (PRC)
135. Inferior Vena Caval Filters: International Symposium & Workshop in Cardiovascular & Interventional Radiology, Cardiothoracic Center, All India Institute of Medical Sciences, November 21, 1997, New Delhi, India
136. Renal Artery Stenting: International Symposium & Workshop in Cardiovascular & Interventional Radiology, Cardiothoracic Center, All India Institute of Medical Sciences, November 21, 1997, New Delhi, India
137. Advances in Endovascular Interventional MRI: International Symposium & Workshop in Cardiovascular & Interventional Radiology, Cardiothoracic Center, All India Institute of Medical Sciences, November 22, 1997, New Delhi, India

138. Current Trends in Intraarterial Thrombolysis for Limb Ischemia: International Symposium & Workshop in Cardiovascular & Interventional Radiology, Cardiothoracic Center, All India Institute of Medical Sciences, November 22, 1997, New Delhi, India
139. Thrombolysis for Arterial Occlusions: Refresher Course on Thrombolytic Therapy, 83rd Scientific Assembly & Annual Meeting of the RSNA, November 30, 1997, Chicago, IL
140. Current Trends in Thrombolytic Therapy: Grand Rounds, Department of Radiology, University of Massachusetts, February 25, 1998, Worcester, MA.
141. Animal Models for Atherosclerosis & Restenosis Research: Research in Vascular & Interventional Radiology, Categorical Course, 23rd Annual Scientific Meeting, SCVIR, March 3, 1998, San Francisco, CA
142. Current Trends in Lower Extremity Arterial Thrombolysis: Symposium on Peripheral Arterial Interventions, Baylor College of Medicine, April 17, 1998, and Houston, TX
143. Peripheral Arterial Thrombolytic Therapy: Radiology Review Course, University of Florida (Gainesville), April 18, 1998, Orlando, FL
144. Peripheral Arterial Angioplasty: Radiology Review Course, University of Florida (Gainesville), April 18, 1998, Orlando, FL
145. Peripheral Arterial Stenting: Radiology Review Course, University of Florida (Gainesville), April 18, 1998, Orlando, FL
146. Techniques & Trends in Thrombolytic Therapy: Special Invited Lecture, Annual Meeting of the Japanese Society for Interventional Radiology, May 18, 1998, Tokyo, Japan
147. Site-specific Antiproliferative Therapy: 7th International and Interdisciplinary Symposium on Endoluminal Stents & Grafts, May 21, 1998, Nara, Japan
148. Advances in Interventional MRI: Fifth International Workshop on Interventional Radiology, Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 26, 1998, Prague, Czech Republic
149. Renal Artery Stenting, Indications & Results: Tenth Annual Conference, Advanced Interventional Techniques for Peripheral Vascular Disease, Midwest Vascular Institute, September 25, 1998, Oakbrook, IL
150. Arterial and Peripheral Graft Thrombolysis, Results of Therapy: Interventional Radiology & Vascular Imaging 1998, University of Pennsylvania Medical Center, November 4-7, 1998, Las Croabas, Puerto Rico
151. Arterial and Peripheral Graft Thrombolysis, Techniques and Tricks of the Trade: Interventional Radiology & Vascular Imaging 1998, University of Pennsylvania Medical Center, November 4-7, 1998, Las Croabas, Puerto Rico
152. The Thrombolysis Consensus Document: Implications for the Practicing Radiologist: Interventional Radiology & Vascular Imaging 1998, University of Pennsylvania Medical Center, November 4-7, 1998, Las Croabas, Puerto Rico
153. Techniques in Catheter Directed Thrombolysis: Eleventh Annual International Symposium on Endovascular Therapy, Miami Cardiac & Vascular Institute, January 26, 1999, Miami, FL

154. Thrombolytic Therapy for Lower Extremity Arterial Occlusions- An International Consensus Report: Eleventh Annual International Symposium on Endovascular Therapy, Miami Cardiac & Vascular Institute, Jan. 26, 1999, Miami, FL
155. Treatment of Acute Lower Extremity Ischemia- Thrombolysis and Surgery. 27th Diagnostic Radiology Postgraduate Course, Cornell University Medical College, February 2, 1999, Aruba, Dutch West Indies
156. Restenosis – What is it? What can you do about it?: 27th Diagnostic Radiology Postgraduate Course, Cornell University Medical College, February 3, 1999, Aruba
157. Interventional MRI: 27th Diagnostic Radiology Postgraduate Course, Cornell University Medical College, February 4, 1999, Aruba
158. Thrombolytic Therapy and Surgery for Acute Lower Limb Ischemia: Visiting Professor Lecture, Department of Radiology, The University of Medicine & Dentistry of New Jersey, February 18, 1999, Newark, NJ
159. Renal Artery Stenting: Radiology Grand Rounds, Department of Radiology, The University Medicine & Dentistry of New Jersey, February 18, 1999, Newark, NJ
160. The Complementary Roles of Thrombolytic Therapy and Surgery in the Management of Lower Extremity Ischemia: The Connecticut Angiography Club, The Hartford Hospital, March 3, 1999, Hartford, CT
161. Newer Thrombolytic Agents: Update on Venous thromboembolic disease. The Department of Radiology, Henry Ford Hospital, March 6, 1999, Dearborn, MI.
162. Update on IVC Filters: Update on Venous thromboembolic disease. The Department of Radiology, Henry Ford Hospital, March 6, 1999, Dearborn, MI
163. Role of Surgery and Lytic Therapy for Lower Extremity Arterial Occlusions: Vascular Interventions in the Twenty-first Century: New Approaches to Vascular Disease. The Vascular Institute, Winthrop University Hospital, May 3, 1999, Mineola, NY
164. Stents in the Management of Renal Artery Stenoses: Vascular Interventions in the twenty-first Century: New Approaches to Vascular Disease. The Vascular Institute, Winthrop University Hospital, May 3, 1999, Mineola, NY
165. Techniques of Thrombolytic Therapy: Endovascular Therapy Course 1999, University of Nancy, May 20, 1999, Paris, France
166. Alternative Techniques and Drugs for Thrombolytic Therapy: The Cleveland Clinic Forum, ETC 99, May 21, 1999, Paris, France
167. Renal Artery Stenting for Hypertension and Ischemic Nephropathy: Eighth Annual Symposium on Endovascular Therapy, The University of Illinois (Peoria), July 10, 1999, Oak Brook, IL
168. Techniques of Thrombolytic Therapy: Eighth Annual Symposium on Endovascular Therapy, The University of Illinois (Peoria), July 10, 1999, Oak Brook, IL
169. Catheter-directed Thrombolysis of Peripheral Arterial Occlusions and Deep Venous Thrombosis: 1999 Sol Sherry Symposium on Thrombolytic Therapy, XVII Congress of the International Society on Thrombosis and Haemostasis, August 15, 1999, Washington, DC
170. Techniques of Local Drug Delivery: Ninth International Interdisciplinary Symposium on Stents, Grafts, and New Techniques, Ruhr University, CIRSE and JSAIR. September 12, 1999, Frankfurt am Main, Germany

171. Causes of Restenosis: Annual Meeting of the Cardiovascular and Interventional Radiology Society of Europe, September 27, 1999, Prague, The Czech Republic
172. Aortoiliac Angioplasty and Stenting: Joint Annual Conference on Neuro-, and Vascular and Interventional Radiology, JACONVIR'99, Oct. 21, 1999, Bangalore India.
173. Inferior Vena Caval Filters: JACONVIR'99, October 22, 1999, Bangalore, India.
174. Thrombolysis Techniques for Lower Extremity Arterial Occlusions: Radiology Grand Rounds, Long Island Jewish Medical Center, Albert Einstein College of Medicine, New Hyde Park, NY
175. Thrombolysis of Peripheral Arterial Occlusions: Peripheral Interventions for the Cardiovascular Specialist, Texas Heart Institute, November 4, 1999, Houston, TX
176. Current Status of Thrombolytic Agents for PAO: Seventh Annual Symposium on Current Issues and Techniques in Interventional Radiology, Montefiore Medical Center, Albert Einstein College of Medicine, November 17, 1999, New York, NY
177. Role of Pro-urokinase as a Thrombolytic Agent: Twenty-sixth Annual Symposium on Critical Problems, New Horizons and Techniques in Vascular and Endovascular Surgery, Montefiore Medical Center, Nov. 18, 1999, New York, NY
178. Lower Extremity Angioplasty & Stenting: Interventional Radiology Rounds. The Bronx-Lebanon Hospital, Albert Einstein College of Medicine, Jan. 26, 2000, New York, NY
179. Tissue-plasminogen activator for thrombolysis in PAO: The New York Vascular Society for Vascular Surgery. February 14, 2000, New York, NY
180. Endovascular Systems for Local Drug Delivery: Symposium of Gene Therapy and Local Drug Delivery. The 25th Annual Scientific Meeting of the SCVIR, Mar. 25, 2000, San Diego, CA.
181. Techniques of Thrombolysis: Plenary Session of the 25th Annual Scientific Meeting of the SCVIR, March 27, 2000, San Diego, CA.
182. Techniques and Results of Thrombolysis for PAO: Vascular and Interventional Radiology 2000, Symposium for RTs and RNs. Department of Radiology, The St.Luke's-Roosevelt Hospital Center, April 15, 2000, New York, NY.
183. Endovascular Drug Delivery as a Treatment for Restenosis: Plenary Session of the Congress on Global Endovascular Therapy, May 17, 2000, Principality of Monaco.
184. Selection of Fibrinolytic Agents: Symposium on Techniques of Intraarterial Fibrinolysis, Congress on Global Endovascular Therapy, May 17, 2000, Monaco.
185. Fibrinolysis and Stents for Venous Disease: Plenary Session. Congress on Global Endovascular Therapy, May 17, 2000, Monaco.
186. Update on Thrombolytic Therapy: Plenary Session. Sixth International Workshop on Interventional Radiology. Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 16, 2000. Prague, Czech Republic.
187. Morbidity and Mortality Conference: Plenary Session. Sixth International Workshop on Interventional Radiology. Czech Radiological Society and Charles Dotter Institute of Interventional Therapy (Oregon, USA), June 17, 2000. Prague, Czech Republic.

188. Current Status of Thrombolytic Therapy: Symposium on Arterial Interventions. Fourth Asian Pacific Congress of Cardiovascular and Interventional Radiology. July 10, 2000. Singapore.
189. IVC Filters: Symposium on Venous Interventions. Fourth Asian Pacific Congress of Cardiovascular and Interventional Radiology. July 12, 2000. Singapore.
190. Biology of Restenosis: Current Issues in IR. Fourth Asian Pacific Congress of Cardiovascular and Interventional Radiology. July 13, 2000. Singapore.
191. Advances in Thrombolytic Therapy for PAO: Annual Meeting of CIRSE 2000. Workshop. September 11, 2000, Maastricht, The Netherlands.
192. Techniques of Thrombolytic Therapy for PAO: Capital District Angiography Club and The Institute for Vascular Health & Disease. The Albany Medical College, October 23, 2000, Albany, NY.
193. Antiplatelet Therapy in Vascular Interventions. Fifth International Symposium on Vascular and Interventional Radiology, BWH-MGH, Harvard Medical School, November 6-9, 2000, Boston, MA.
194. Past, Present, and Future of Interventional Radiology. The Third Annual Meeting of the Brazilian Society for Interventional Radiology and Endovascular Radiology (SOBRICE) and The 23rd Brazilian Congress of Radiology, November 12, 2000, Salvador, Bahia, Brazil.
195. Laboratory Research and Experimental Models in Interventional Radiology. The Third Annual Meeting of the Brazilian Society for Interventional Radiology and Endovascular Radiology (SOBRICE) and The 23rd Brazilian Congress of Radiology, November 12, 2000, Salvador, Bahia, Brazil.
196. Renal Artery Angioplasty & Stenting: Techniques and Results. The Third Annual Meeting of the Brazilian Society for Interventional Radiology and Endovascular Radiology (SOBRICE) and The 23rd Brazilian Congress of Radiology, November 13, 2000, Salvador, Bahia, Brazil.
197. Restenosis: Biology and Preventive Strategies. The Third Annual Meeting of the Brazilian Society for Interventional Radiology and Endovascular Radiology (SOBRICE) and The 23rd Brazilian Congress of Radiology, November 13, 2000, Salvador, Bahia, Brazil.
198. Local Drug Delivery Against Restenosis: Promises and Problems. The Third Annual Meeting of the Brazilian Society for Interventional Radiology and Endovascular Radiology (SOBRICE) and The 23rd Brazilian Congress of Radiology, November 13, 2000, Salvador, Bahia, Brazil.
199. Thrombolysis and Stenting for Venous Occlusions. The Third Annual Meeting of the Brazilian Society for Interventional Radiology and Endovascular Radiology (SOBRICE) and The 23rd Brazilian Congress of Radiology, November 15, 2000, Salvador, Bahia, Brazil.
200. Techniques for Arterial Thrombolysis. The Third Annual Meeting of the Brazilian Society for Interventional Radiology and Endovascular Radiology (SOBRICE) and The 23rd Brazilian Congress of Radiology, November 15, 2000, Salvador, Bahia, Brazil.

201. Thrombolytic Therapy for PAO: Results of Recent Trials. The Third Annual Meeting of the Brazilian Society for Interventional Radiology and Endovascular Radiology (SOBRICE) and The 23rd Brazilian Congress of Radiology, November 15, 2000, Salvador, Bahia, Brazil.
202. Thrombolytic Therapy for Peripheral Vascular Disease. Millennium Congress of Vascular and Interventional Radiology (ISVIR, SCVIR, CIRSE, and IRSA), December 9, 2000, New Delhi, India.
203. The Biology of Restenosis. Millennium Congress of Vascular and Interventional Radiology, December 9, 2000, New Delhi, India.
204. Local Intramural Drug Delivery. Millennium Congress of Vascular and Interventional Radiology, December 9, 2000, New Delhi, India.
205. Vena Caval Filters. Millennium Congress of Vascular and Interventional Radiology, December 12, 2000, New Delhi, India.
206. Advances in Peripheral Arterial Thrombolysis. First International Workshop on Vascular and Interventional Radiology, Nizam's Institute of Medical Sciences and ISVIR, December 18, 2000, Hyderabad, India.
207. Thrombolysis and Stenting for Venous Occlusions. First International Workshop on Vascular and Interventional Radiology, Nizam's Institute of Medical Sciences and ISVIR, December 18, 2000, Hyderabad, India.
208. The Evolution of Interventional Radiology. The Chandravathi Ramanathan *Oration in Radiology*. Department of Radiology, The Nizam's Institute of Medical Sciences, December 19, 2000, Hyderabad, India.
209. Initial Experience with Combination Lytic and Anti-platelet Therapy. Thirteenth International Symposium on Endovascular Therapy, Miami Cardiac and Vascular Institute, January 23, 2001. Miami Beach, FL
210. Local Drug Delivery. Thirteenth International Symposium on Endovascular Therapy, Miami Cardiac and Vascular Institute, January 23, 2001, Miami Beach, FL.
211. Venous Thrombolysis and Stents. Thirteenth International Symposium on Endovascular Therapy, Miami Cardiac and Vascular Institute, January 25, 2001, Miami Beach, FL
212. Overview of Inferior Vena Cava Filters. Thirteenth International Symposium on Endovascular Therapy, Miami Cardiac and Vascular Institute, January 25, 2001, Miami Beach, FL.
213. Thrombolytics: what's new? Eleventh Annual Meeting of the AVIR. SCVIR 2001. March 5, 2001. San Antonio, Texas.
214. Venous Thrombolysis & Stenting. MET 2001-Advances in Vascular & Non-vascular Interventions. University of Rome and University of Parma (with SIRM, EAR, CIRSE, SICVE), March 21, 2001, Parma, Italy.
215. Venous Thrombolysis and Stenting. Department of Radiology, The University Medicine & Dentistry of New Jersey, May 3, 2001, Newark, NJ
216. Advances in Combination Thrombolytic Therapy. Radiology Grand Rounds. Department of Radiology, The University Medicine & Dentistry of New Jersey, May 3, 2001, Newark, NJ
217. Combined Lytic and Antiplatelet Therapy. Vascular and Interventional Radiology 2001, AVIR and Department of Radiology, The St. Luke's-Roosevelt Hospital Center, May 4, 2001, New York, NY

218. Advances In IVC Filter Placement. Global Endovascular Therapy. June 18, 2001, Grimaldi Forum, Monaco.
219. Progress in Local drug Delivery. Global Endovascular Therapy. June 19, 2001, Grimaldi Forum, Monaco.
220. Fibrinolysis – current aspects. Global Endovascular Therapy. June 19, 2001, Grimaldi Forum, Monaco.
221. Peripheral Vascular Complications. Global Endovascular Complications. Department of Neurosurgery. State University of New York at Buffalo. July 25-28. Jackson Hole, WY.
222. Peripheral Arterial Thrombolytic Therapy. Medical Grand Rounds. The New York Presbyterian Hospital. Cornell Medical Center. September 20, 2001. New York, NY.
223. Fibrinolysis in Iliac Artery Occlusions. Symposium on Chronic Aorto-iliac Occlusions. Annual Meeting of the Cardiovascular and Interventional Radiological Society of Europe. September 25, 2001. Gothenburg, Sweden.
224. IVC Filter Complication. Complications Conference. Annual Meeting of the Cardiovascular and Interventional Radiological Society of Europe. September 25, 2001. Gothenburg, Sweden.
225. Combined Thrombolytic and Antiplatelet Therapy for Peripheral Arterial Occlusions. Frontiers in Vascular Disease. Stanford University School of Medicine, October 20, 2001, Pebble Beach, CA.
226. Biology of Restenosis. Fourth Annual Meeting of the Brazilian Society of Interventional Radiology (SoBrice), November 4, 2001. Rio de Janeiro, Brazil.
227. IVC Filters. Fourth Annual Meeting of the Brazilian Society of Interventional Radiology (SoBrice), November 5, 2001. Rio de Janeiro, Brazil.
228. Thrombolytic Therapy for Peripheral Arterial Occlusions and DVT. Second CardRio Conference. Cardiology Society of the State of Rio de Janeiro and The Brazilian Academy of Military Medicine. November 5, 2001. Rio de Janeiro, Brazil.
229. The ULTIMATE Trial: Rationale for Combined Lytic and Antiplatelet therapy in PAO. Advanced Interventional Management Symposium, Albert Einstein College of Medicine, Department of Radiology, November 13, 2001, New York, NY.
230. Combined Lytic and Antiplatelet Therapy for PAO: Value and Limitations. The 28th Global Endovascular Symposium, Albert Einstein College of Medicine, Department of Vascular Surgery, November 15, 2001, New York, NY.
231. Antiplatelet Therapy during Peripheral Arterial Thrombolysis. Fourteenth International Symposium on Endovascular Therapy, Miami Cardiac and Vascular Institute, January 22, 2002, Miami Beach, FL.
232. MR-guided Vascular and Non-vascular Interventions. 27th Annual Scientific Meeting, Society for Interventional Radiology (Plenary Session), April 8, 2002, Baltimore, MD.
233. Combination Thrombolytic and GPIIB/IIIA receptor-antagonist Therapy for PAO. The New England Society for Cardiovascular & Interventional Radiology, May 6, 2002, Boston, MA.
234. Retrievable IVC Filters. Workshop on Interventional Radiology. Charles University and Dotter Interventional Institute. June 13-15, 2002, Prague, Czech Republic.

235. New Thrombolytics. Workshop on Interventional Radiology. Charles University and Dotter Interventional Institute. June 13-15, 2002, Prague, Czech Republic.
236. Combination lytic and antiplatelet therapy. First International Workshop on Interventional Radiology. June 16-18, 2002, Jelenia Gora, Poland.
237. Clinical Trials with Combination Therapy in PAO. Meeting of the Scientific Advisory Panel, Cardiovascular Medicine, Genentech, Inc., Aug. 3, 2002, Charleston, SC.
238. Advances in Arterial Thrombolytic Therapy. AIR 2002. Sponsored by SoBrice, Brazilian College of Radiology, & SIR. August 19, 2002. Arian, The Amazon, Brazil.
239. Venous Interventions. AIR 2002. Sponsored by SoBrice, Brazilian College of Radiology & SIR. August 21, 2002. Arian, The Amazon, Brazil.
240. MRI-Guided Transcatheter Interventions. Combined Grand Rounds, UMass Memorial, Memorial Campus, September 20, 2002, Worcester, MA
241. Advances in Endovascular MRI-guided Interventions. Eleventh Annual MIIT Radiology & Endovascular Therapy Seminar. University of Illinois College of Medicine, Oct. 25, 2002, Oak Brook, IL.
242. Combination Therapy Using Thrombolytics & Anti-platelet Agents for the treatment of Acute Arterial Occlusions. Eleventh Annual MIIT Radiology & Endovascular Therapy Seminar. University of Illinois College of Medicine, Oct. 26, 2002, Oak Brook, IL.
243. MRI-Guided Endovascular Interventions. Biomedical Imaging Research Opportunities Workshop. Jan 31, 2003, Bethesda, MD.
244. MRI-Guided Endovascular Interventions. Advances in Radiology, Department of Radiology, University of Medicine and Dentistry of New Jersey, July 2-9, 2003, Anchorage, AK.
245. Update on IVC Filters. Advances in Radiology, Department of Radiology, University of Medicine and Dentistry of New Jersey, July 2-9, 2003, Anchorage, AK.
246. Catheter-directed Thrombolytic Therapy for Ilio-femoral DVT. Advances in Radiology, Department of Radiology, University of Medicine and Dentistry of New Jersey, July 2-9, 2003, Anchorage, AK.
247. Antiplatelet Therapy during PAO Thrombolysis. Advances in Radiology, Department of Radiology, University of Medicine and Dentistry of New Jersey, July 2-9, 2003, Anchorage, AK.
248. Catheter Directed Thrombolytic Therapy for DVT. Combined Grand Rounds, UMass Memorial, Memorial Campus, August 22, 2003, Worcester, MA
249. MRI-Guided Endovascular Interventions. Department of Radiology, UMass Medical School, September 17, 2003, Worcester, MA
250. New Thrombolytic Drugs and Their Use. Annual Meeting of the Cardiovascular and Interventional Radiology Society of Europe (CIRSE). Sept. 24, 2003, Antalya, Turkey.
251. Advances in Vascular Imaging. Imaging Strategies in Primary Care Medicine. Tufts Health Care Institute. Tufts University School of Medicine. October 10, 2003. Newton, MA.
252. Interventional MRI. Sixth Annual Meeting of the Indian Society for Vascular Interventional Radiology, Post-Graduate Institute of Medical Education and Research Oct. 31, 2003, Chandigarh, India.

253. Current Status of IVC Filters. Sixth Annual Meeting of the Indian Society for Vascular & Interventional Radiology, Post-Graduate Institute of Medical Education and Research, Oct. 31, 2003, Chandigarh, India.
254. Endovascular Management of Acute DVT. Sixth Annual Meeting of the Indian Society for Vascular & Interventional Radiology, Post-Graduate Institute of Medical Education and Research, Nov.1, 2003, Chandigarh, India.
255. Endovascular MRI-Guided Intervention: Is it feasible? Advances in Interventional Medicine, Montefiore Hospital, Albert Einstein University, November 19, 2003, New York, NY.
256. Clinical Aspects of Arterial Thrombolysis. Annual Meeting of the Cardiovascular and Interventional Radiology Society of Europe (CIRSE). Sept. 29, 2004, Barcelona, Spain.
257. Interventional MRI. Chirurgia Vascolare e Radiologia Interventistica, Istituto Ortopedico Galeazzi, October 1, 2004, Milan, Italy.
258. Thrombolytic Agents and their Use. Seventh Annual Meeting of the Brazilian Society of Interventional Radiology (SoBrice), October 7, 2004, Rio de Janeiro, Brazil.
259. Use of Mechanical Devices during Thrombolytic Therapy. Seventh Annual Meeting of the Brazilian Society of Interventional Radiology (SoBrice), October 7, 2004, Rio de Janeiro, Brazil.
260. Future Developments in Interventional Radiology. Sixth Asia-Pacific Congress of Cardiovascular and Interventional Radiology, October 31, 2004, New Delhi, India.
261. Future Directions in MR-Guided Vascular Interventions. Sixth Asia-Pacific Congress of Cardiovascular and Interventional Radiology, October 31, 2004, New Delhi, India.
262. Clinical Aspects of Arterial Thrombolysis. Prague Interventional Workshop (PIWO). November 12, 2004. (Live Internet Video Transmission). Worcester, MA, to Prague, Czech Republic.
263. Future Developments in Interventional Radiology. Medical Technology Grand Rounds, Bioengineering Institute, Worcester Polytechnic Institute, March 15, 2005.
264. Percutaneous Balloon Angioplasty: Standing the Test of Time. Symposium on The Management of Infra-inguinal Arterial Disease. SIR 30Th Annual Scientific Meeting, March 31, 2005, New Orleans, LA.
265. Future Development in Interventional Radiology. Opening Session Lecture. The 9th International Symposium on Interventional Radiology & New Vascular Imaging and the 34th Annual Meeting of the Japanese Society of Angiography & Interventional Radiology, May 11, 2005, Awaji, Hyogo, Japan.
266. Innovations In Image-guided Interventions. Annual Meeting of The American Association of Physicists in Medicine (New England Chapter). June 3, 2005. Salem, MA
267. Femoro-popliteal Balloon Angioplasty: Is There a Role? Advances in Interventional Medicine, Montefiore Hospital, Albert Einstein University, November 14, 2005, New York, NY.
268. Evolving Technologies in IR: A Look into the Future. Department of Radiology, Medical University of Vienna, AKH, December 28, 2005, Vienna, Austria.

269. Evolving Technologies in IR: A Look into the Future. First Scientific Meeting of the Pan- Arab Interventional Radiology Society (PAIRS), Arab Health Conference, January 25, 2006, Dubai, United Arab Emirates.
270. Dialysis Access Management: How to Handle the Explosion. First Scientific Meeting of the Pan-Arab Interventional Radiology Society (PAIRS), Arab Health Conference, January 25, 2006, Dubai, United Arab Emirates.
271. Aorto-Iliac Angioplasty & Stenting. Department of Radiology, American University, Beirut, January 27, 2006, Beirut, Lebanon.
272. Clinical Aspects of Intra-arterial Thrombolytic Therapy. Guest Speaker, Lebanese Society of Radiologists, January 27, 2006, Beirut, Lebanon.
273. Renal Angioplasty & Stenting: Indications and Results. Symposium on Interventional Nephrology, ANGIORAD, March 10, 2006, Recife, PE, Brazil.
274. Central Venous Access: Technical Considerations. Symposium on Interventional Nephrology, ANGIORAD, March 11, 2006, Recife, PE, Brazil.
275. Management of Complications of CV Dialysis Catheters. Symposium on Interventional Nephrology, ANGIORAD, March 11, 2006, Recife, PE, Brazil.
276. Maintenance of Dialysis Access Fistulas and Grafts. Symposium on Interventional Nephrology, ANGIORAD, March 11, 2006, Recife, PE, Brazil.
277. Image-Guided Interventions: The Cutting Edge. IR of the Future – Really New Stuff. SIR 31st Annual Scientific Meeting, April 2, 2006, Toronto, Canada
278. *2006 IR Film Interpretation Panel*. SIR 31st Annual Scientific Meeting, April 2, 2006, Toronto, Canada
279. Evolving Technologies in IR: A Look into the Future. Department of Radiology, The New York Presbyterian University, College of P&S, Columbia University, April 26, 2006, New York, NY.
280. Acute Limb Ischemia: Optimal Therapy. Atherosclerotic Peripheral Vascular Disease Symposium II: Screening and Intervention (American Heart Association) July 11, 2006, Boston, MA.
281. Evolving Technologies in IR: A Look into the Future. Opening Session of The Asian Pacific Congress of Cardiovascular & Interventional Radiology, October 8, 2006, Pattaya, Thailand.
282. Endovascular Treatment in Renal Insufficiency: Is it worth? The Asian Pacific Congress of Cardiovascular & Interventional Radiology, October 9, 2006, Pattaya, Thailand.
283. Thrombolytic Therapy for DVT. The Asian Pacific Congress of Cardiovascular & Interventional Radiology, October 10, 2006, Pattaya, Thailand.
284. Developments for Future Image-Guided Therapy. Ninth Annual Meeting of SoBRICE 2006/Brazilian College of Radiology. November 9, 2006, Sao Paulo, Brazil.
285. Update on Vena Cava Filters. Ninth Annual Meeting of SoBRICE 2006/ Brazilian College of Radiology. November 10, 2006. Sao Paulo, Brazil.
286. Thrombolytic Therapy for DVT. Ninth Annual Meeting of SoBRICE 2006/Brazilian College of Radiology. November 9, 2006, Sao Paulo, Brazil.
287. Renovascular Interventions. Ninth Annual Meeting of SoBRICE 2006/Brazilian College of Radiology. November 9, 2006, Sao Paulo, Brazil.

288. Fenestrated & Branched Stent-Grafts for AAA Endovascular Repair – An Overview. Le Cinque Giornate di Milano. Milan Interventional Derby, University of Milan. November 16, 2006. Milan, Italy.
289. Where is Interventional Radiology Headed?: A Clinical Overview. Special Focus Session: The OR of the Future. Annual Scientific Meeting of the RSNA. November 29, 2006. Chicago IL
290. Chairs and IR Division Directors. IR, Your Hospital and Leadership. 32nd Annual Scientific Meeting of SIR. March 4, 2007, Seattle, WA.
291. Becoming a Department Chair. Transitions: Reinventing your Career. 32nd Annual Scientific Meeting of SIR. March 4, 2007, Seattle, WA.
292. Spontaneous Bleeding in Anti-coagulated Patients. GEST 2007 - Global Embolization Symposium & Technologies. April 26, 2007, Barcelona, Spain.
293. Embolization in Pelvic Trauma: Techniques & Outcomes. GEST 2007 – Global Embolization Symposium & Technologies. April 26, 2007, Barcelona, Spain.
294. Upper GI Bleeding: What gets Embolized? GEST 2007 - Global Embolization Symposium & Technologies. April 27, 2007, Barcelona, Spain.
295. Evolving Technologies in Interventional Radiology. Radiology Grand Rounds. Kings County Hospital (SUNY Downstate). July 31, 2007, Brooklyn, NY.
296. Evolving Technologies in Interventional Radiology. Department of Radiology, Beijing Chaoyang Hospital (Dr. Renyou Zhai, Chair). October 16, 2007, Beijing, China.
297. Evolving Technologies in Interventional Radiology. Department of Radiology, Affiliated First People's Hospital (Dr. Gui-Xiang Zhang, Chair), Shanghai Jiaotong University. October 24, 2007, Shanghai, China.
298. Thrombolytic Therapy for Acute Limb Ischemia. The 14th Chinese Congress of Radiology, Chinese Society of Radiology (Dr. Ji Qi, President). October 20, 2007, Nanjing, China.
299. Future & Evolving Technologies in Interventional Radiology. The 14th Chinese Congress of Radiology, Chinese Society of Radiology (Dr. Ji Qi, President). October 20, 2007, Nanjing, China.
300. How to Present a Scientific Paper in English: Useful Expressions. Inaugural Meeting, Society of Gastrointestinal Interventions (SGI 2007), Asan Medical Center, November 3, 2007, Seoul, Korea.
301. Future & Evolving Technologies in Interventional Radiology. Plenary Session. Inaugural Meeting, Society of Gastrointestinal Interventions (SGI 2007), Asan Medical Center, November 3, 2007, Seoul, Korea.
302. Clinical Aspects of IA Thrombolytic Therapy. Symposium on Arterial Thrombolysis & Thrombectomy. Eighth Asian-Pacific Congress of CVIR 2008, June 10, 2008, Kuala Lumpur, Malaysia.
303. Techniques of IA Lytic Therapy. Symposium on Arterial Thrombolysis & Thrombectomy. Eighth Asian-Pacific Congress of CVIR 2008, June 10, 2008, Kuala Lumpur, Malaysia.
304. Mechanical Thrombectomy: Choice of Devices. Symposium on Arterial Thrombolysis & Thrombectomy. Eighth Asian-Pacific Congress of CVIR 2008, June 10, 2008, Kuala Lumpur, Malaysia.

305. Thrombolytic Therapy for DVT: How I do it. Symposium on Venous Occlusive Disorders. Eighth Asian-Pacific Congress of CVIR 2008, June 11, 2008, Kuala Lumpur, Malaysia.
306. Thrombolytic Therapy for DVT: An Update. Eleventh Annual Meeting of SoBRICE. November 19, 2008, Salvador, Brazil.
307. Vena Caval Filters: An Update. Eleventh Annual Meeting of SoBRICE. November 19, 2008, Salvador, Brazil.
308. Upper GI Bleeding: Evaluation & Transcatheter Treatment. Eleventh Annual Meeting of SoBRICE. November 19, 2008, Salvador, Brazil.
309. Embolization for Pelvic Trauma: Techniques & Results. Eleventh Annual Meeting of SoBRICE. November 19, 2008, Salvador, Brazil.
310. Thrombolytic Therapy for Acute Limb Ischemia. An Update. Eleventh Annual Meeting of SoBRICE. November 21, 2008, Salvador, Brazil.
311. Stenting for Renal Artery Stenoses: Evidence-based Guidelines. The 12th Annual Meeting of The Indian Society for Vascular & Interventional Radiology. October 7, 2009, New Delhi, India.
312. Outcomes of Extremity Arterial Thrombolysis & Thrombectomy. The 12th Annual Meeting of The Indian Society for Vascular & Interventional Radiology. October 8, 2009, New Delhi, India.
313. New Trends in The Management of Arterial Gastrointestinal Bleeding. 3rd Annual Meeting of The Society of Gastrointestinal Intervention. October 9, 2009, Seoul, Korea.
314. What does a 'good' manuscript reviewer do? 3rd Annual Meeting of The Society of Gastrointestinal Intervention; October 10, 2009, Seoul, Korea.
315. Pelvic Trauma: Embolization Techniques & Outcomes. The 6th Annual Convention of Embolotherapy Techniques; The Albert Einstein Hospital; August 24, 2010, Sao Paulo, Brazil.
316. New Trends in The Management of Arterial Gastrointestinal Bleeding. The 6th Annual Convention of Embolotherapy Techniques; The Albert Einstein Hospital; August 24, 2010, Sao Paulo, Brazil.
317. Percutaneous Hepatic Perfusion versus Best Alternative Care for Metastatic Melanoma. Special "Hot Topic" Lecture. The 6th Annual Convention of Embolotherapy Techniques; The Albert Einstein Hospital; August 24, 2010, Sao Paulo, Brazil.
318. ChemoSAT-PHP: A New Paradigm for Liver Cancer Therapy. Sanctuary of Interventional Radiology (Medical University of South Carolina); April, 2011, Kiawah Island, SC,
319. ChemoSAT-PHP: A New Paradigm for Liver Cancer Therapy. Fourteenth Annual Meeting of SoBRICE (Brazilian IR Society); August 10-13, 2011, Buzios, Brazil.
320. ChemoSAT-PHP: A New Paradigm for Liver Cancer Therapy. The 7th Annual Convention of Embolotherapy Techniques; The Albert Einstein Hospital; October 9-11, 2011, Sao Paulo, Brazil.
321. ChemoSAT-PHP: A New Paradigm for Liver Cancer Therapy. SIDI (Sociedad Interamericana de Intervencionismo)/Panama Congress of Radiology, August 16-18, 2012, Panama City, Panama.

322. ChemoSAT-PHP: A New Paradigm for Liver Cancer Therapy. EmboAires; November 10-12, 2011, Buenos Aires, Argentina.
323. New Trends in The Management of Arterial Gastrointestinal Bleeding. EmboAires; November 10-12, 2011, Buenos Aires, Argentina.
324. New Embolic Agents. EmboAires; November 10-12, 2011, Buenos Aires, Argentina.
325. ChemoSAT-PHP: A New Paradigm for Liver Cancer Therapy. Embolotherapy 2011(Garcia Monaco), Hospital Italiano de Buenos Aires, November 10-12, 2011, Buenos Aires, Argentina.
326. ChemoSAT-PHP: A New Paradigm for Liver Cancer Therapy. Congress of SAARC Radiology Societies (Nepal Radiologists Association); B.P. Koirala Institute of Medical Sciences, February 16-19, 2012, Dharan, Nepal.
327. New Trends in The Management of Arterial Gastrointestinal Bleeding. Congress of SAARC Radiology Societies (Nepal Radiologists Association); B.P. Koirala Institute of Medical Sciences, February 16-19, 2012, Dharan, Nepal.
328. Hepatic Chemosaturation: Technical Concepts & Recent Clinical Trials. The Turkish Society of Interventional Radiology; Annual Meeting - March 15-18, 2012, Izmir, Turkey.
329. Chemosaturation with Percutaneous Hepatic Perfusion: A New Paradigm for Liver Cancer Therapy. The 10th APCCVIR, 4th JSIR, and 11th ISIR Meetings. May 30-June 2, 2012, Kobe, Japan.
330. Chemosaturation. Tumor Ablation: Beyond the Liver. Italian Conference on Interventional Oncology (ICIO); December 12-13, 2013, Milan, Italy.
331. Chemosaturation with Percutaneous Hepatic Perfusion: A New Paradigm for Liver Cancer Therapy. 67th Conference of the Indian Radiological & Imaging Association; January 25, 2014, Agra, India.
332. New Trends in the Management of Acute Gastrointestinal Bleeding. 67th Conference of the Indian Radiological & Imaging Association; January 26, 2014, Agra, India.
333. The Evolution of Interventional Radiology. National Institute of Biomedical Imaging & Bioengineering, National Institutes of Health, May 5, 2014, Bethesda, MD
334. NIBIB Research Portfolio - Redux. National Image Guided Therapy Workshop. March 15, 2016, Bethesda, MD
335. NIBIB R&D Programs. Plenary Session on "Innovative Care-Changing Therapy". Society of Interventional Radiology Annual Meeting, April 3, 2016, Vancouver, Canada.
336. From Research to Practice. Quantitative Imaging Biomarkers Workshop Opening Session. April 13, 2016, Alexandria, VA
337. Imaging Research at NIBIB. 12th Asian Pacific Congress on Cardiovascular & Interventional Radiology. April 22, 2016. Suzhou, China
338. Bioengineering Research at NIBIB. 12th Asian Pacific Congress on Cardiovascular & Interventional Radiology. April 23, 2016. Suzhou, China
339. Innovations in Liver Tumor Diagnosis & Therapy. Mongolian Society of Interventional Radiology & SGIT/IAEA. April 29, 2016, Ulan Bator, Mongolia.
340. Trans-NIH Initiatives in Molecular Imaging. Early-stage Investigators WMI Society, World Molecular Imaging Conference., September 9, 2016, New York, NY.

341. NIBIB Research Activities. American Institute of Medical and Biological Engineers (AIMBE) Congressional Briefing. September 15, 2016, Washington, DC.
342. Vision & Future Directions in Point of Care Technologies. Keynote Lecture: NIH-IEEE Special Topics Conference on Healthcare Innovations and Point of Care Technologies. November 11, 2016, Cancun, Mexico.
343. Multilateral Collaborations: Academia, Industry, and Government. Coalition of Imaging & Bioengineering Research (CIBR), RSNA, November 30, 2016. Chicago, IL.
345. A Revolution in Medicine: Medical Imaging & Image-Guided Therapy. Mentoring in Medicine. Association of American Medical Colleges, December 19, 2016, Washington, DC.
346. Care-Changing Imaging. Special Session on Care Changing Innovations in IR, March 5, 2017, Washington, DC.
347. Innovative Care-Changing Therapies in Interventional Radiology. New England Society of Interventional Radiology, March 13, 2017, Boston, MA.
348. NIBIB Research Activities. American Institute of Medical and Biological Engineers (AIMBE) Congressional Briefing. April 5, 2017, Washington, DC.
349. Health-Related R&D for Humans on Earth & During Space Exploration. Decadal Survey on Life & Physical Sciences Research at NASA. Session on Microgravity Synergies with Non-NASA Agencies. The National Academies of Sciences, Engineering, and Medicine. April 18, 2017, Washington, DC.
350. From Research to Practice. Quantitative Imaging Biomarkers (QIBA) Workshop Opening Session. May 17, 2017, Alexandria, VA.
351. Engineering & Informatics in Medical Imaging & Surgery: NIBIB-Sponsored Research. Computer Assisted Radiology & Surgery, June 21, 2017, Barcelona, Spain.
352. Advances in Cancer & Cardiovascular Imaging & Intervention. 5th Asian-Pacific Congress on Interventional Oncology, August 25, 2017, New Delhi, India.
353. NIH Grants Mechanisms. Symposium on Research. Cardiovascular & Interventional Radiology Society of Europe, September 16, 2017, Copenhagen, Denmark.
354. Diagnosing Disease with Medical Imaging: Faster, Better, Cheaper, Smaller, and more Accessible! ARBIR Congressional Briefing, November 14, 2017, Washington, DC.
355. Emerging Trends in Diagnostic Imaging & Image-Guided Intervention. Computer Assisted Radiology & Surgery, June 20, 2018, Berlin. Germany.
356. Health-related R&D to Benefit Humans on Earth and During Space Exploration. Computer Assisted Radiology & Surgery: The NIH-NASA Collaboration, June 22, 2018, Berlin. Germany.
357. Advancing Minimally Invasive Image-Guided Procedures. SOBRICE 2018, August 9, 2018, Sao Paulo, Brazil.
358. Artificial Intelligence in Medical Imaging – Introduction. Workshop in AI in MI, NIH Clinical Center, August 23, 2018, Bethesda, MD.
359. Advances in Bioengineering and Informatics for Interventional Radiology. SIDI (Interamerican Society of Interventional Radiology)/Latin American Society of Pediatric Radiology. November 8-10, 2018; Lima, Peru.
360. Machine Intelligence in Medical Imaging: Perspective from the NIH. Computer Assisted Radiology & Surgery. June 18-21, 2019, Rennes, France.

361. Engineering & Informatics in Medical Imaging & Surgery. Asan Medical Center. October 8, 2019. Seoul, Republic of Korea.
362. What NIH can offer IR Translational Research? The 13th Meeting of the Society of Gastrointestinal Intervention October 11, 2019, Grand Hyatt Incheon, Republic of Korea.
363. Accelerating Clinical Adoption of Machine Intelligence Applications in Medical Imaging. NIBIB Trans-NIH Workshop, November 5, 2019, Bethesda, MD.
364. Adoption of Machine Intelligence Applications in Medical Imaging. The ARBIR/CIBR Virtual Steering Committee Meeting, RSNA 2019; December 4, 2019. Chicago, IL.
365. The Medical Imaging and Data resource Center (MIDRC). The ARBIR/CIBR Virtual Steering Committee Meeting, RSNA 2020; December 2, 2020. From Boston, MA.
366. AI in US: the NIBIB Perspective. American Institute of Ultrasound in Medicine (AIUM) 2021 AI Summit (Virtual). January 13, 2021. From Boston, MA.
367. The Medical Imaging and Data resource Center (MIDRC). 2021 Molecular Med TRI-CON Conference – Connecting the Precision Medicine Community (Virtual - London. England). February 16-18, 2021. From Boston, MA.
368. The Medical Imaging and Data Resource Center (MIDRC). University of Cincinnati, Radiology Grand Rounds (Virtual). March 1, 2021. From Boston, MA.
369. The Medical Imaging and Data Resource Center (MIDRC). The ARBIR *Briefing for US Congress* (Academy of Radiology & Biomedical Imaging Research; Virtual - Washington, DC). March 31, 2021. From Boston, MA.

Lectures at Brigham and Women’s Hospital / Harvard Medical School Continuing Medical Education Courses on Cardiovascular & Interventional Radiology and Magnetic Resonance Imaging, Boston, MA:

- *NMR Blood Flow Measurement (1984)
- *Vascular MRI vs. Angiography (1985)
- *Angiography of non-Atherosclerotic Vascular Disease (1987)
- *Quantitative Coronary Angiography (1987)
- *Angiography of Visceral Arteries (1988)
- *Clinical Vascular MRI (1989)
- *Blood Flow Phenomena in Clinical Vascular MRI (1990)
- *Patient Management in Interventional Radiology (1990)
- *Newer Methods in Thrombolysis (1990)
- *MRI of Blood Flow (1991, 1992, 1993)
- *Newer Techniques for PAO Thrombolysis (1992)
- *Thrombolytic Therapy: When and when not? (1994)
- *MR-guided Interventions (1996)
- *Results of the PURPOSE Trial (1998)

Didactic Workshops/Moderator Sessions/Featured Abstract Critiques are not listed.

Workshops organized/convened at the National Institute of Biomedical Imaging & Bioengineering, NIH, Bethesda, MD.:

- 1) Gadolinium Deposition: What we know, and what we don't know. Feb 15-16, 2018. Co-sponsors: NIH, RSNA, and ACR. NIH Campus, Bethesda, MD.
- 2) Artificial Intelligence Applications in Medical Imaging, August 23-24, 2018. Co-sponsors: NIH, RSNA, ACR, ARBIR. NIH Campus, Bethesda, MD.
- 3) Accelerating Clinical Adoption of Machine Intelligence Applications in Medical Imaging. November 5, 2019. Co-sponsors: NIH, RSNA, ACR, ARBIR. NIH Campus, Bethesda, MD.

BIBLIOGRAPHY

Original Peer-reviewed Reports:

1. Davids N, Kandarpa K. Analysis of hemodynamic factors in atherogenesis at branching sites, PSU Research Report for the National Heart and Lung Institute, NIH, Bethesda, Maryland. (PHS Grant No. IR-01-HL-11289-05) February 1975.
2. Kandarpa K, Davids N. Analysis of the fluid dynamic effects on atherogenesis at branching sites. *Journal of Biomechanics* 1976; 9:735-741.
3. Davids N, Kandarpa K, Melville J. A generalized finite element analysis model for entry flow in ducts of arbitrary cross-section. *Journal of Computers and Fluids* 1977; 5:73-86.
4. Weiss GR, Garnick MB, Osteen RT, Steele GD, Wilson RE, Schade D, Kaplan WD, Boxt LM, Kandarpa K, Meyer RJ, Frei ET. Longterm hepatic arterial infusion of 5-fluorodeoxyuridine for liver metastases using an implantable infusion pump. *Journal of Clinical Oncology* 1983; 1:337-344.
5. Weissman BN, Sosman MD, Braunstein EM, Dadkhakipoor H, Kandarpa K, Sledge CB, Lowell JD, Thornhill ST. Intravenous methylmethacrylate complicating total hip replacement. *Journal of Bone and Joint Surgery* 1984; 66-A: 443-450.
6. Gardiner GA, Meyerovitz MF, Boxt LM, Harrington DP, Taus RH, Kandarpa K, Ganz P, Selwyn A. Selective coronary angiography using a power injector. *AJR* 1986; 146:831- 833.
7. Gardiner GA, Koltun W, Kandarpa K, Whittemore A, Meyerovitz MF, Bettmann MA, Levin DC, Harrington DP. Thrombolysis of occluded femoropopliteal grafts. *AJR* 1986; 147:621-626.
8. Kandarpa K, Davids N, Gardiner GA, Harrington DP, Selwyn AP, Levin DC. Hemodynamic evaluation of arterial stenosis by computer simulation. *Investigative Radiology* 1987; 22:393-403.
9. Kandarpa K, Drinker PA, Singer SJ, Caramore D. Forceful pulsatile local infusion of enzyme accelerates thrombolysis: In vivo evaluation of a new delivery system. *Radiology* 1988; 168:739-744.

10. Meyerovitz MF, Goldhaber SZ, Reagan K, Polak JF, Kandarpa K, Grassi CJ, Bettmann MA, Harrington, DP. Tissue-plasminogen activator vs. urokinase in peripheral arterial and graft occlusions: A randomized trial. *Radiology* 1990; 175:75-78.
11. Sullivan KL, Gardiner GA, Kandarpa K, Bonn J, Shapiro MJ, Carabasi RA, Smullens S, Levin DC. Efficacy of thrombolysis in infrainguinal bypass grafts. *Circulation* 1991; 83: 9-105.
12. Kandarpa K, Pinwica-Worms D, Chopra PS, Adams DF, Hunink MGM, Donaldson MC, Whittemore A, Mannick JA, Harrington DP. Prospective double-blinded comparison of MRI and aortography in the preoperative evaluation of abdominal aortic aneurysms; *JVIR* 1992; 3:83-89.
13. Chopra PS, Kandarpa K, Welch WR, Chakrabarty J: Endoluminal thermal occlusion of the ureter with the electromagnetic field-focusing device. *JVIR* 1992; 3:305-312.
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Inventions and Original Designs:

- 1) Miniature Endoluminal MR Imaging/Intervention Coil (U. S. Patent No. 5,323,778; June 28, 1994)
- 2) Heated intraluminal stents (Method and Device for recanalization of a body passageway) (U.S. Patent No. 5,178,618; January 12, 1993). Licensed (GU applications) to Endocare, Inc., Irvine, CA, 1996
- 3) A new device for forceful intra-thrombic injection of plasminogen activators (patent not filed, a commercial device is based on this design, 1987)

Patents & Patent Applications - Delcath Systems, Inc. (2009-2013): Systems and methods for homeostatically treating organ disease using local delivery of therapeutic agents

- 1) US - Application No. 13/508,729 (published as 2012/0232457)
- 2) Australia - Application No. AU20090354965
- 3) Canada - Application No. 2780230
- 4) China - Application No. CN200980163271.6 (published as 102711894)
- 5) China - Issued Utility Model Patent No. 201020002009 Catheter & Apparatus
- 6) Japan – Application No. JP20120537849

Intellectual Property Creation at Duracell /P.R. Mallory & Co. (1975-1978):

- 1) Automated table-top capacitor sealing/package system (1978)
- 2) Automated table-top capacitor assembling system (1977)
- 3) Tantalum anode sintering system (1976)

4) Feeding mechanism for metallic powders (used in manufacture of tantalum capacitor anodes, 1975)

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36. Kim K, Kandarpa K, Kim YH. Extra-spinal Incidental Findings in Spine MRI Examinations: Frequency and Clinical Impact on Patient Management. RSNA 2005, Chicago, IL. Abstract No. SSA-1-09

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38. Lagoe DT, Cartier WA, Kandarpa K. Computerized Modeling of the Effect of Vena Cava Filter Tilt on Filter Performance. Abstract# 273. JVIR 2010; 21 (2) S104.

39. Moeslein FM, Nutting CM, Kandarpa K. Chemosaturation With Percutaneous Hepatic Perfusion: Vasopressor, Nitroglycerin, And Pre-Embolization Requirements, ILCA 2012, Abstract # 1305. Berlin, Germany, September 13-16, 2012.

40. Nutting CM, Zager J, Kandarpa K. Chemosaturation Therapy with Percutaneous Hepatic Perfusion in Patients with Hepatic Metastases from Melanoma: Exploratory Data from a Randomized Controlled Phase 3 Study. Abstract #00131. The 10th APCCVIR, 4th JSIR, and 11th ISIR Meetings. May 30-June 2, 2012, Kobe, Japan.
41. Zager J, Nutting CM, Kandarpa K. Chemosaturation Therapy with Percutaneous Hepatic Perfusions of Melphalan Versus Best Alternative Care in Patients with Hepatic Metastases: Randomized Multicenter Phase 3 Study. Abstract #00136. The 10th APCCVIR, 4th JSIR, and 11th ISIR Meetings. May 30-June 2, 2012, Kobe, Japan.

Published Synopses of Selected Invited Talks:

1. Restenosis. JVIR 1996; 7(1): S21
2. Endoluminal MR Imaging of the Arterial wall. JVIR 1996; 7(1): S43-S46
3. MR Image-guided Interventions: An Overview. JVIR 1996; 7(1): S130-S132.
4. Treatment of Acute Lower-limb Ischemia: Role of Thrombolysis & Surgery. JVIR 1997; 8(1): S52-S55.
5. Animal Models in Atherosclerosis & Restenosis Research. JVIR 1998; 9(1): S282-S291.
6. Infra-inguinal Interventions. JVIR 1999; 10(2): S86
7. Techniques of Thrombolysis. JVIR 2000; 11(2): S87-S90.
8. Gene Therapy & Local Drug Delivery: Imaging & Intervention. JVIR 2000; 11(2): S408
9. Catheter-based Techniques for Endovascular Local Drug Delivery. JVIR 2000; 11(2): S419-S423.
10. MR Guidance for Interventions. JVIR 2002; 13 (2): (S) P108-112.
11. Building a Research Program. JVIR 2002; 13(2): P227
12. Kandarpa K. Percutaneous Balloon Angioplasty: Standing the Test of Time. JVIR 2005; 16 (2): (S) P57-P59.